

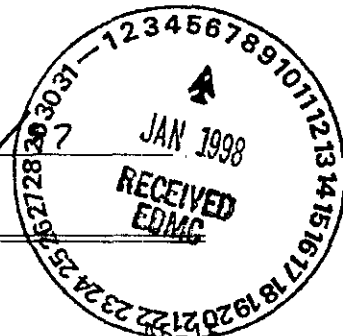
Meeting Minutes  
Inter Agency Management Integration Team (IAMIT)  
EPA Conference Room  
712 Swift Blvd., Richland  
September 23, 1997

Appvl.: Jackson E. Kinzer Date: 10-28-97  
Jackson E. Kinzer, RL  
IAMIT Representative

Appvl.: Douglas R. Sherwood Date: 10/28/97  
Douglas R. Sherwood, EPA  
IAMIT Representative

Appvl.: Michael A. Wilson Date: 10/28/97  
Michael A. Wilson, Ecology  
IAMIT Representative

Prepared by Terry W. Noland Date: 10/28/97  
Appvl.: Terry W. Noland  
for Fluor Daniel Hanford, Inc.



Distribution

Abdul, W.	RL	S7-53	Rasmussen, J. E.	RL	H6-18
Arnold, L. D.	WHC	G3-27	Reddick, G. W.	FDH	N1-26
Brown, W. R.	FDH	G3-27	Rewinkel, D. S.	FDH	S7-40
Cameron, K. D.	RL	A5-54	Romine, L. D.	RL	R3-79
Carlson, J. L.	BWHC	L1-02	Sanders, G. H.	RL	A5-15
Dahl, S. L.	Ecology	B5-18	Sautter, S. P.	ODOE	
Haass, C. C.	RL	S7-51	625 Marion N.E., Salem, OR		97310*
Hansen, C. A.	RL	S7-41	Selby, M. A.	Ecology	B5-18*
Holt, R. G.	RL	S7-41	Sellers, E. D.	RL	S7-41
Hopkins, A. M.	ITH	N1-26	Sherwood, D. R.	EPA	B5-01*
Jackson, D. E.	RL	A5-15	Skinnarland, R.	Ecology	B5-18
Kinzer, J. E.	RL	S7-50	Stanley, R.	Ecology	B5-18
McCleary, G. J.	FDH	B3-53	Stevenson, M. W.	FDH	G3-27
McClusky, J. K.	RL	S7-54	Williams, N. H.	FDH	R3-11
McLaughlin, M. A.	FDH	G3-27	Williams, J. D.	FDH	S7-40
Miera, F. R.	RL	A5-15*	Wilson, M. A.	Ecology	B5-18
Morrison, R. D.	FDH	G3-27*	Yerxa, J. K.	RL	A7-75
Noland, T. W.	FDH	G3-27*	EDMC		H6-08*

\* W/Attachments

IAMITMIN.923

**IAMIT MEETING**  
**September 23, 1997**

**1. Approval of Minutes**

The minutes of the August 23, 1997 IAMIT Meeting were approved by Messrs. Kinzer, Wilson and Sherwood.

**2. SMS Memorandum of Understanding Update**

Kerry Cameron, DOE-RL provided an update on the development of the DOE complex-wide Project Management and Control System. The specifications for the new system are not expected until April 1998. The HANDI system is on line on a limited basis for project reporting. Dave Einan, EPA and Clark Hauter, Ecology will be provided access to HANDI for testing and comments. The goal is to be able to provide finalized reports from HANDI by the end of October 1997. The parties agreed to extend the current reporting agreement through October 1997.

**3. Negotiations Summary - PFP and FFTF**

Roger Stanley, Ecology provided a copy of a draft Tentative Agreement for FFTF negotiations (Attachment 1) and discussed the proposed changes. DOE-RL agreed to quickly review the proposed changes and inform Ecology and EPA if there are any problems. The need for public meetings for the proposed FFTF changes was discussed. Mike Wilson, Ecology stated that the public meetings must be held. The public comment period for FFTF package will occur 30 days after approval of the Tentative Agreement.

Jon Yerxa, DOE-RL provided an update on the status of the PFP negotiations. The next negotiation session was scheduled for October 2 and a draft change package is expected by November 3. Roger Stanley stated that Ecology is proposing a phased approach to the PFP negotiations that will be reflected in changes to the draft Agreement in Principle (AIP). Ecology will provide DOE-RL with the revised AIP before the next negotiation session.

**4. M-92-00 (Cs/Sr, Na and Special Case Waste) Treatment Storage and Disposal Facilities Milestone Ownership**

Andrea Hopkins, Fluor Daniel Hanford presented the path forward for M-92-00 ownership (Attachment 2). A Memorandum of Understanding is being developed to transfer ownership of the M-92-00 milestones to Facility Transition.

**5. Purex Facility and Tunnels Transfer to ER Program**

Larry Romine, DOE-RL presented the strategy for Purex Tunnels Management (Attachment 3). The PUREX Tunnels will remain in EM-60 until additional waste is stored or the need for the tunnels is eliminated.

**6. Milestone M-41-22 (Single Shell Tank (SST) Interim Stabilization) Dispute Resolution**

Milestone M-41-22, which requires pumping of six SSTs by September 30, 1997 will not be met. The major milestone M-41-00, due 9/30/2000, is impacted by technical considerations and budget decisions and may experience a 3 year delay. The regulators granted an extension to the IAMIT level dispute resolution period to October 28, 1997 (Attachment 4). The regulators also requested that the RL Manager provide a letter to EPA and Ecology referencing the needed extension to Major Milestone M-41-00 and the need to conduct negotiations on the M-41 milestone series. The request was documented on IAMIT Decision Form Number 7 (Attachment 5).

**Action:** Jackson Kinzer and George Sanders, DOE-RL to draft letter for RL Manager regarding strategy for M-41.

**7. Milestone M-40-07 (C-103 Vapor Treatment System) Dispute Resolution**

Suzanne Dahl, Ecology reported that Ecology was finalizing comments on the DOE Lessons Learned document. The dispute at the Project Managers level was extended through November 18, 1997 (Attachment 6).

**8. Milestone M-45-03A (SST C-106 Retrieval) Dispute Resolution**

Roger Stanley, Ecology provided proposed Change Request M-45-97-05 (Attachment 7) as Ecology's acceptable resolution of the dispute. George Sanders, DOE-RL provided a red-lined version of Ecology's proposed change request (Attachment 8) that would be acceptable to DOE-RL. Both versions were discussed at length. DOE-RL agreed to develop with their Office of Chief Counsel a new version of the Change Request that would be acceptable to DOE-RL, but would also possibly include some of the language that was redlined from the Ecology proposal. The new proposal would be provided to Ecology by September 24, 1997. No extension of the dispute at the IAMIT level was granted. If no agreement is reached by September 24, 1997, the dispute automatically elevates to the Director of the Washington State Department of Ecology for final determination.

**9. Spent Nuclear Fuels Project Briefing**

Beth Sellers, DOE-RL and Nancy Williams, FDH provided an update on the status of the Spent Nuclear Fuels Project. The DOE-RL and contractor reviews of the schedule have been completed (Attachment 9 and 10). The impacts to the schedule and critical path were discussed (Attachments 11 and 12). The detailed draft activity level schedule was distributed (Attachment 13). The schedule for the start of removal of fuel is still delayed by 14 months. Total project cost (TPC) is still being developed. The RL Manager will have to approve the new schedule and TPC prior to determining the impacts on other Hanford projects. The approval is not expected until sometime in November. Spent Nuclear Fuels will have a draft change request prepared by September 30, 1997. The final change package for Spent Nuclear Fuels is expected the first part of March 1998.

Doug Sherwood, EPA expressed concern regarding the current regulatory approach now that there are significant delays to the project. Bob Holt, DOE-RL discussed the analysis of impacts of using other regulatory approaches (Attachment 14).

**Action:** DOE-RL to schedule meeting as soon as possible with regulators to discuss impact of not using Engineering Evaluation/Cost Analysis (EE/CA) process for Spent Nuclear Fuels.

ATTENDEES

INTER AGENCY MANAGEMENT INTEGRATION TEAM (IAMIT) MEETING

DATE: 9/23/97

<u>NAME</u>	<u>ORGANIZATION</u>	<u>MAILSTOP</u>	<u>(✓) FOR ATTACHMENTS</u>
✓ Jackson Quizon	DOE		
✓ Ron Skinnarland	Ecology		
✓ Mike Wilson	Ecology		
✓ George Sanders	DOE-RL		
✓ Suzanne Dahl	Ecology		
✓ Dan McCluskey	RL		
✓ Sam Lewinell	FDH Proj. Dir.		
✓ Richard Abell	DOE-RL		
✓ Marc Stevens	FDG/H PAI		
✓ Jim Rasmussen	DOE/RL		
✓ Janice Williams	FDH Project Dir.		
✓ E. L. M. A.	RL/END		

# ATTENDEES

## INTER AGENCY MANAGEMENT INTEGRATION TEAM (IAMIT) MEETING

DATE: 9/23/97

<u>NAME</u>	<u>ORGANIZATION</u>	<u>MAILSTOP</u>	<u>(✓) FOR ATTACHMENTS</u>
✓ <u>Terry Noland</u>	<u>FDH TPAI</u>	<u>G3-27</u>	
✓ <u>LARRY ARDOLD</u>	<u>FDH/TPAI</u>	<u>G3-27</u>	
✓ <u>DALE JACKSON</u>	<u>DOE RL EMT</u>	<u>A5-15</u>	
✓ <u>Andrea Hopkins</u>	<u>FDH/PO</u>	<u>N1-26</u>	
<u>Jon YERXA</u>	<u>DOE - RL</u>	<u>A7-75</u>	
✓ <u>Larry Rennie</u>	<u>DOE-RL/TPD</u>	<u>B3-19</u>	
✓ <u>George Reddick</u>	<u>FDH</u>	<u>N1-26</u>	
✓ <u>Russ Brown</u>	<u>FDH-TPAI</u>	<u>G3-27</u>	
✓ <u>Doug Sherwood</u>	<u>EPA</u>	<u>B5-01</u>	✓
✓ <u>JEFF CARLSON</u>	<u>BWHC</u>	<u>L1-02</u>	
✓ <u>GORDON McCLEARY</u>	<u>FDH</u>	<u>B3-53</u>	
✓ <u>STEVE SAUTTER</u>	<u>OES Office of Envy</u>		✓
✓ <u>KERRY CAMERON</u>	<u>DOE-RL/PIO</u>	<u>A5-54</u>	
✓ <u>Melodie Selby</u>	<u>Ecology</u>	<u>B5-18</u>	✓

Ecology edit draft  
September 23, 1997

**TENTATIVE AGREEMENT  
HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER  
NEGOTIATIONS REGARDING THE FAST FLUX TEST FACILITY**

In January 1997, the Secretary of the U.S. Department of Energy (DOE) made issued a decision to maintain the Hanford's Fast Flux Test Facility (FFTF) in a standby mode pending a decision (to be made by December 1998) on whether the Facility will play a future role be utilized in the national tritium production strategy. In April, 1997 the DOE Richland Operations Office (RL), State of Washington Department of Ecology (Ecology), and U.S. Environmental Protection Agency (EPA) staff personnel, hereinafter the Parties, agreed to conduct negotiations for the purpose of revising Hanford Federal Facility Agreement and Consent Order (Agreement) milestones for the FFTF. The These negotiations have resulted in this tentative agreement, which would delete the to delete existing M-81 series milestones and target dates, and to place the M-20-29A milestone in a "To Be Determined" (TBD) status pending the Secretary of Energy's decision. Should environmental compliance issues arise during this interim period of consideration, they will be addressed as part of Ecology's sitewide compliance assurance program.

This tentative agreement will be submitted for tribal and public review and comment for a 45 day period. Copies of this agreement will also be available for review at the parties' public information repositories. The public comment period dates will run be from approximately October 1, 1997 to November 16, 1997. Prior to final agreement, a response to comments document will be developed and the parties will make appropriate revisions to the agreement before final signature. The parties anticipate that final signatures approval will take place by November 30, 1997.

The parties further agree that to minimize additional delay in the event they fail to agree on any changes as the result of public the comment period, all unresolved matters shall be referred to the Agreement dispute resolution process beginning at the Inter Agency Management Integration Team (IAMIT) level as described in the Agreement. The parties shall attempt to resolve the dispute(s) as provided for in Agreement paragraph(s) 30.

The parties also agree, that should the Secretary's decision be not to use the FFTF in the tritium production strategy and to resume transition to shutdown activities, that the original M-81 milestone language and structure deleted by this proposed action will be used as a the starting point for new TPA transition milestone negotiations. The parties commit to initiate negotiations on FFTF transition within 90 days of a decision not to use FFTF as a production facility. Although, it is uncertain at this time, it is assumed that the Office of Nuclear Energy, Science and Technology, will retain the management and funding responsibility for FFTF under a shutdown scenario.

Signed this \_\_\_\_ day of September 1997

\_\_\_\_\_  
John D. Wagoner, Manager  
U. S. Department of Energy  
Richland Operations Office

\_\_\_\_\_  
Tom Fitzsimmons, Director  
State of Washington  
Department of Ecology

\_\_\_\_\_  
Chuck Clarke, Regional Administrator  
U. S. Environmental Protection Agency  
Region 10

## DRAFT

<b>Change Number</b> <b>M-81-97-01</b>	<b>Federal Facility Agreement and Consent Order</b> <b>Change Control Form</b> <small>Do not use blue ink. Type or print using black ink.</small>	<b>Date</b> <b>September 23, 1997</b>																					
<b>Originator</b> <u>USDOE/Ecology</u> <b>Phone</b> _____																							
<b>Class of Change</b> <input checked="" type="checkbox"/> I - Signatories <input type="checkbox"/> II - Executive Manager <input type="checkbox"/> III - Project Manager																							
<b>Change Title</b> <b>Deletion of Fast Flux Test Facility (FFTF) transition milestones and targets (M-81-00 series).</b> <b>Modification of milestone M-20-29A.</b>																							
<b>Description/Justification of Change</b> <p>In January 1997, the Secretary of the U.S. Department of Energy (DOE), issued DOE's decision to maintain Hanford's Fast Flux Test Facility (FFTF) in a standby mode pending a decision (projected to be made by December 1998) on whether or not the facility will play a role in the nation's tritium production strategy. As a consequence of this action, FFTF transition work is being limited to activities that would not inhibit a reactor restart, and work schedules are no longer valid. This change request deletes out of date milestones and target dates from the scope of the TPA.</p> <p>Should the Secretary of Energy's decision be that FFTF has no tritium production role, and that FFTF transition and initiation of the surveillance and maintenance phase should occur: DOE, Ecology and EPA (hereafter the parties) agree that within ninety (90) days following such final Secretarial decision, the DOE Richland Operations Office (RL) shall issue a draft change control request detailing a proposed set of FFTF transition milestones and associated targets. Such proposal shall also include proposed modifications to TPA interim milestone M-20-29A (Sodium Storage and Reaction Facilities closure planning). Following the receipt of this draft change request, the parties agree to complete negotiation of a new FFTF transition milestone series in no more than six (6) months time.</p>																							
<b>Impact of Change</b> <p>Approval of this change control request deletes the current TPA FFTF transition milestones and target dates, and allows all activities required during the standby condition to proceed without jeopardizing any necessary future FFTF mission(s).</p>																							
<b>Affected Documents</b> <p>The <u>Hanford Federal Facility Agreement and Consent Order</u>, as amended, and Hanford Site internal planning and budget documents (e.g., Project Management Plans and Multi Year Work Plans).</p>																							
<table border="0"> <tr> <td colspan="3"><b>Approvals</b></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____ Approved _____ Disapproved</td> </tr> <tr> <td>DOE</td> <td>Date</td> <td></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____ Approved _____ Disapproved</td> </tr> <tr> <td>EPA</td> <td>Date</td> <td></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____ Approved _____ Disapproved</td> </tr> <tr> <td>Ecology</td> <td>Date</td> <td></td> </tr> </table>			<b>Approvals</b>			_____	_____	_____ Approved _____ Disapproved	DOE	Date		_____	_____	_____ Approved _____ Disapproved	EPA	Date		_____	_____	_____ Approved _____ Disapproved	Ecology	Date	
<b>Approvals</b>																							
_____	_____	_____ Approved _____ Disapproved																					
DOE	Date																						
_____	_____	_____ Approved _____ Disapproved																					
EPA	Date																						
_____	_____	_____ Approved _____ Disapproved																					
Ecology	Date																						

The following M-81-00 series milestones and targets are deleted by this action:

Milestone	Description	Due Date
M-81-00	Complete FFTF Facility Transition and initiate the surveillance and maintenance phase.  This major milestone will be achieved by completion of all activities necessary to achieve the end point criteria for placing the facility in a safe and stable surveillance and maintenance mode.	<del>12/31/2001</del> <del>Deleted</del>
M-81-00-T01	Complete Reactor Defueling.  At the completion of defueling, there will be 236 non-fueled components in the reactor vessel, 113 fueled components in the interim decay storage and 258 fueled components in the fuel storage facility.	9/30/95 Completed 4/19/95
M-81-00-T02	Complete transfer of Irradiated Fuel to Dry Cask Storage.  The Irradiated Fuel assemblies and pin containers will be transferred from the interim decay storage vessel and the fuel storage facility to the IEM cell for residual sodium removal, loaded into a core component container, transferred to the reactor service building cask loading station for placement into an interim storage cask for dry storage, and transferred to the interim storage area located in the northeast corner to the FFTF complex.	<del>10/31/98</del> <del>Deleted</del>
M-81-00-T03	Complete transfer of unirradiated fuel to the Plutonium Finishing Plant.  Thirty two unirradiated fuel assemblies presently stored in the interim decay storage vessel will be transferred to the IEM cell for washing and drying, loaded into existing approved shipping containers, and transferred to an appropriate storage area in the Plutonium Finishing Plant.	<del>10/31/98</del> <del>Deleted</del>
M-81-00-T04	Complete transfer of special fuel to the Idaho National Engineering Laboratory for consolidated storage.  Sodium-bonded irradiated metal and carbide fuel pins from assemblies cleaned and disassembled in the IEM Cell will be loaded into existing, approved shipping casks, and transported to the Idaho National Engineering Laboratory in Idaho Falls, Idaho, for consolidated storage. One unirradiated metal fuel assembly will also be dispositioned in a similar manner.	<del>10/31/98</del> <del>Deleted</del>
M-81-00-T05	Complete auxiliary systems deactivation.  A major portion of the plant auxiliary systems are required to support hot sodium circulation prior to draining the sodium. As these systems, and the balance of plant systems, become available for shutdown, they will be deactivated to a safe, stable condition.	<del>3/21/2001</del> <del>Deleted</del>
M-81-01	Initiate sodium storage facility construction.  This milestone will be achieved when the construction contractor is issued the notice to proceed with construction by the contracting officer.	2/28/97 completed 10/09/95

M-81-02	<b>Complete sodium storage facility startup.</b>	7/31/98 completed 01/97
	<p>This milestone will be achieved by completion of the sodium storage facility startup activities which include final testing of the mechanical and electrical systems and confirmation that the facility is ready to receive sodium from FFTF. Construction of the new facility closely coupled to the FFTF complex is required to support sodium drain operations. This new facility will be designed, constructed and operated in compliance with RCRA and WAC 173-303 storage requirements. The facility will provide storage capacity for the 260,000 gallons of FFTF metallic sodium coolant.</p>	
M-81-02-T01	<b>Submit final sodium disposition evaluation report/decision point.</b>	6/30/98 Deleted
	<p>Under this target DOE will submit its final report following evaluation of the acceptable sodium product form for the TWRS Tank Sludge Pretreatment Process (i.e., caustic washing). This evaluation will be conducted in concert with TWRS TPA Milestone M-50-03 (due date March 31, 1998). This Hanford Site Radioactive (FFTF, Hallam, and Sodium reaction experiment) sodium evaluation will address other conversion options for disposal of the sodium if the product use for TWRS is not viable, regardless of which option is selected, a new sodium reaction facility will be constructed adjacent to the sodium storage facility to convert the bulk metallic sodium to the appropriate chemical form. This report will include a decision on the final disposition of the Hanford Site Radioactive Sodium (e.g., disposal or reuse). Appropriate milestones and target dates will be established for construction and operation of the sodium reaction facility based on the option selected.</p>	
M-81-03	<b>Submit FFTF End Point Criteria Document.</b>	12/31/98 Deleted
	<p>A document identifying the end point criteria necessary to place the FFTF in a safe and stable configuration will be developed. This document will be provided to EPA and Ecology for review, and approval for the hazardous substances proposed to remain at the facility.</p>	
M-81-04	<b>Complete FFTF Sodium Drain.</b>	3/31/2000 Deleted
	<p>This milestone will be complete when all of the sodium coolant has been drained from the plant to the new sodium storage facility to the maximum practical extent. The sodium residuals that remain are integral to the system, are solid in form, and adhere to the surfaces to the system components. The residuals will be maintained under an inert gas blanket to minimize potential reactions during the long-term surveillance and maintenance phase. During final disposition of the facility, any regulated wastes generated from the cleaning or dismantlement of these systems, will be appropriately managed.</p>	
M-81-04-T01	<b>Complete reactor and heat transport system sodium drain.</b>	4/30/98 Deleted
	<p>The reactor and primary and secondary heat transport system sodium coolant and supporting sodium systems will be maintained in a safe configuration, molten and circulating until the fuel is removed from the FFTF Reactor vessel and the sodium storage facility is operational. The sodium will then be drained to the tanks located in the sodium storage facility and allowed to freeze.</p>	

M-81-04-T02      Complete interim decay storage vessel and fuel storage facility sodium drain.      ~~12/31/98 Deleted~~

The interim decay storage vessel and fuel storage facility sodium will be maintained in a molten state until the fuel is removed from these storage locations. The sodium will then be drained to the tanks located in the sodium storage facility and allowed to freeze.

M-81-05      Submit FFTF Surveillance and Maintenance Plan.      ~~6/30/2001 Deleted~~

A plan describing the S&M phase will be developed. This plan will be provided to EPA and Ecology for review, and approval for the hazardous substances proposed to remain at the facility. This plan will include documentation of lists of hazardous substances, including dangerous waste that remain in the FFTF Facility upon completion of Phase I activities because the hazardous substance: (1) contains non-dangerous waste components that are highly radioactive, (2) is part of the plant structure and/or (3) is an intact piece(s) of equipment.

M-81-06      Complete PCB Transformer disposal.      ~~9/30/2001 Deleted~~

The nineteen Polychlorinated Biphenyl (PCB) electrical transformers at the FFTF will be disposed of after the transformers are removed from service. Twelve of the nineteen transformers, will be drained, flushed and removed from FFTF within thirty days after being removed from service as specified in 40 CFR 761. Seven of the transformers, which are in areas that are difficult to obtain access, will be drained, flushed and removed from FFTF within nine months of cessation of service to ensure their disposal within one year from the start of the storage. Cessation of service constitutes the start of the storage, and 40 CFR 761 limits the storage and subsequent disposal to a one-year period.

The following M-20-29A interim milestone due date is modified by this action. The parties agree to revisit and reestablish a due date as appropriate should FFTF transition resume:

M-20-29A      Submit sodium storage facility and sodium reaction facility closure plan or request for procedural closure as defined in section 6.3.3 of this Tri-Party Agreement to EPA and Ecology.      ~~12/31/99 TBD~~

A potential use for the sodium as feedstock in the TWRS Program has been identified and will be evaluated as discussed pursuant to M-81-02-T01. The sodium will be stored as product material in the sodium storage facility until the final disposition of the material is determined. FFTF is proceeding on the basis of providing RCRA and WAC 173-303 compliant storage for the sodium. The sodium reaction facility is included in the permit request, even though the sodium reaction facility availability and regulatory status will be determined by the 1998 evaluation/decision point. If the sodium use for the TWRS is confirmed, a request for procedural closure as defined in section 6.3.3 of the Tri-Party Agreement will be submitted for the sodium storage facility and sodium reaction facility units. If the sodium is determined to be a waste, a closure plan will be submitted for the two units.

**DRAFT**  
**FAST FLUX TEST FACILITY**

**TRIBAL AND PUBLIC INVOLVEMENT PLAN**

In January 1997, the Secretary of the U.S. Department of Energy (DOE), issued DOE's decision to maintain Hanford's Fast Flux Test Facility (FFTF) in a standby mode pending a decision (projected to be made by December 1998) on whether or not the facility will play a role in the nation's tritium production strategy. As a consequence of this action, FFTF transition work is being limited to activities that would not inhibit a reactor restart, and work schedules are no longer valid. A change request which deletes out of date FFTF milestones and target dates from the scope of the Hanford Federal Facility Agreement And Consent Order (Tri Party Agreement or TPA) is proposed.

The creation of a Class I proposals to modify the TPA Change Request require the initiation of an adequate proposal review/comment period to revise the TPA necessitates public involvement. A 45 day public comment period, beginning approximately October 1, 1997 and running through November 15, 1997 will be the principal tribal and public involvement activity. The Hanford Advisory Board, regulators, local and state officials in Washington and Oregon, and Tribal nations are among the groups that will continue to receive briefings on the FFTF Standby Project on a requested basis. No public meetings are planned as this change does not make the decision for an FFTF mission, but rather only reflects the status change of the FFTF until such time that such a final FFTF mission decision is made.

A Response to Public Comments Received Document will be created by the three agencies after the end of the public comment period.

Copies of the proposed modifications and associated information and response to public comments received will be sent to the TPA Public Information Repositories, as well as to members of the public requesting these documents.

If USDOE decides to include utilize the FFTF in the nation's tritium production strategy, the department will consult with the public, complete necessary safety environmental reviews and comply fully with the National Environmental Policy Act (NEPA) and other applicable requirements.

---

# TPA Milestone M-92-00

# TPA Major Milestone M-92-00

---

- Acquisition and/or Modification of Facilities for Storage, Treatment/Processing, and Disposal of Cesium and Strontium Capsules (Cs/Sr), Unirradiated Uranium (UU), Bulk Sodium (Na), and 300 Area Special Case Waste (SCW)
- Tri-Party Agreement Major Milestone Management Review, SCW Integration
  - September 23, 1997
  - Richland, Washington

# Status of SCW Integration

---

- DOE AMT is Owner of Record for M-92
  - Ownership formally being transferred to AMF via MOU
- DOE AMF now leads integration of 300 Area SCW under M-92

# Status of SCW Integration (cont'd)

---

- FDH tasked by AMF to facilitate milestone transfer
  - MOU being developed
- FDH tasked to integrate SCW activities under M-92
  - Key element is M-92-13 (Project Management Plan)
  - PMP due September 2000

# Status of SCW Integration (cont'd)

---

- Funding
  - Currently split between AMF and AMT
  - Develop strategy for integrating AMF/AMT workscope, budget and schedule
  - WPD will handle shutdown of 340 Building

---

# PUREX Tunnels Management

Larry Romine

September 23, 1997

# PUREX Tunnels Management After Turnover to ER Program

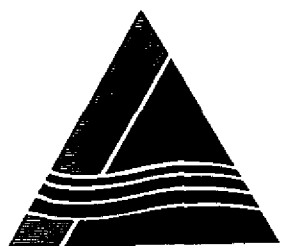
---

- Tunnels will not be turned over to ER Program at this time
- Tunnels will remain in EM-60 until:
  - » Additional waste is placed in storage if needed, or
  - » It is determined that the tunnels are not required for additional waste storage

# Current Status of PUREX Tunnels Waste Storage

---

- Compiling data on waste from 324/327 Buildings that may need to be stored in tunnels
- Discuss with DOH off-gas upgrades necessary before placing additional waste in tunnel
- Develop cost estimates/schedule information for options
- Make decision



Tri-Party Agreement

September 23, 1997

EXTENSION TO DISPUTE RESOLUTION FOR HANFORD FEDERAL FACILITY AGREEMENT AND  
CONSENT ORDER CHANGE REQUEST M-41-97-01

On July 16, 1997 the U.S. Department of Energy invoked the dispute resolution provisions of Tri-Party Agreement Article VIII concerning Tri-Party Agreement Change Request M-41-97-01. The initial period during which the Department of Energy and Ecology Project Managers seek resolution of the dispute was extended through August 26, 1997. On August 26, 1997 the dispute was elevated to the Inter Agency Management Integration Team (IAMIT) for resolution, and the period during which the IAMIT seeks resolution of the dispute was extended through September 23, 1997.

Discussions between the Department of Energy and Ecology have indicated that the scope of the discussions on Change Request M-41-97-01 should be expanded to address impacts to the Major Milestone M-41-00, Complete Single Shell Tank Interim Stabilization. The time period for resolution of the dispute on Change Request M-41-97-01 is hereby extended through October 28, 1997 to allow time for further discussions between the Department of Energy and Ecology.

Jackson E. Kinzer  
Assistant Manager, Tank Waste  
Remediation System  
U.S. Department of Energy  
Richland Operations Office

Michael A. Wilson  
Manager, Nuclear Waste Program  
State of Washington  
Department of Ecology

cc: L. D. Arnold, FDH  
M. L. Blazek, OOE  
S. L. Dahl, Ecology  
B. G. Erlandson, LMHC  
C. C. Haass, DOE  
N. T. Hepner, Ecology  
D. R. Sherwood, EPA  
A. M. Umek, FDH  
J. K. Yerxa, DOE

D. Powaukee, Nez Perce  
R. Jim, YIN  
B. Burke, CTUIR  
Administrative Record

## HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER

## INTER AGENCY MANAGEMENT INTEGRATION TEAM (IAMIT)

## DECISION / DETERMINATION / ACTION ASSIGNMENT

Number: 007

This form is intended to document the decisions and determinations made by the IAMIT within their authorities under the terms and conditions of the Hanford Federal Facility Agreement and Consent Order. This form is also intended to provide notification, to the affected persons, of the IAMIT's decisions / determinations or actions assigned.

## SUBJECT

(Note the change request number, disputed subject or milestone addressed)

M-41-22 DISPUTE (IAMIT LEVEL) 9/23/97

## DECISION / DETERMINATION / ACTION ITEM (Note the assignee and due date)

The Draft M41-22 recovery schedule M41-22 Dispute indicates a potential 3-year delay to the major milestone M41-00. EPA and Ecology have requested that the Senior Field Office Manager RL (Mr. John Wagoner) prepare and send to Ecology and EPA senior management a letter referencing DOE proposed TPA Milestone M41-00 extension and enter into formal Tri-Party Agreement negotiations on the M41-00 milestone series and incorporate the M41-22 dispute resolution into said negotiations.

Subject M41-22 Dispute 9/23/97 has been extended 30-days to 10/28/97.

## IS THIS DECISION / DETERMINATION / ACTION ITEM

☐ FINAL ☐ INTERIM (Further action to be taken)

## IAMIT Member Approvals

DOE

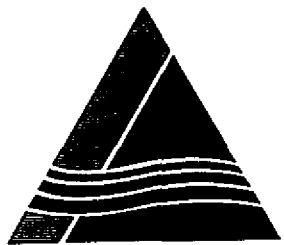
EPA

Ecology

Date

Date

Date



Tri-Party Agreement

September 23, 1997

EXTENSION TO DISPUTE RESOLUTION FOR HANFORD FEDERAL FACILITY AGREEMENT AND  
CONSENT ORDER MILESTONE M-40-07

On April 9, 1997 the U.S. Department of Energy invoked the dispute resolution provisions of Tri-Party Agreement Article VIII concerning the State of Washington Department of Ecology assertions about completion of Interim Milestone M-40-07. The period during which the Department of Energy and Ecology Project Managers seek resolution of the dispute was previously extended through September 27, 1997. The dispute resolution period is hereby further extended through November 18, 1997 at the Project Manager level.

Jackson E. Kinzer  
Assistant Manager,  
Tank Waste Remediation System  
U.S. Department of Energy  
Richland Operations Office

Michael A. Wilson  
Manager, Nuclear Waste Program  
State of Washington  
Department of Ecology

cc: L. D. Arnold, FDH  
S. L. Dahl, Ecology  
B. G. Erlandson, LMHC  
C. C. Haass, DOE  
D. H. Irby, DOE  
A. B. Stone, Ecology  
A. M. Umek, FDH  
J. K. Yerxa, DOE  
M. L. Blazek, OOE  
D. Powaukee, Nez Perce  
R. Jim, YIN  
B. Burke, CTUIR  
Administrative Record

Change Number <b>M-45-97-05</b>	Federal Facility Agreement and Consent Order Change Control Form <small>Do not use blue ink. Type or print using black ink.</small>		DRAFT Date <b>September 23, 1997</b>																		
Originator <b>Ecology</b>	Phone																				
Class of Change	<input type="checkbox"/> I - Signatories <input checked="" type="checkbox"/> II - Executive Manager <input type="checkbox"/> III - Project Manager																				
Change Title	<b>Dispute Resolution Agreement: Tri Party Agreement interim milestone M-45-03A</b>																				
<p><b>Description/Justification of Change</b> This M-45-97-05 change request constitutes a Dispute Resolution Agreement in the matter of the U. S. Department of Energy and its contractors (hereafter referred to as DOE) failure to meet the requirements of Tri Party Agreement interim milestone <u>M-45-03A: Initiate sluicing retrieval of tank 241-C-106 to resolve the high heat safety issue and demonstrate waste retrieval: October 31, 1997.</u></p> <p style="text-align: center;"><u>Compliance Issue description</u></p> <p>Interim milestone M-45-03A was established in January of 1994 as a key tank waste remediation system (TWRS) project requirement. Work required to meet M-45-03A has long been recognized as of primary importance in that it both: a) provides for resolution of tank C-106 high heat safety (and environmental) issues via waste transfer to more appropriate facilities, and b) represents a critical test and demonstration of waste retrieval technologies, and an important first step in building DOE's ability to retrieve Hanford tank wastes for processing. Unfortunately, slow DOE progress in meeting M-45-03A requirements has plagued this project to the point where DOE is now unable to meet the milestones' October 31, 1997 compliance deadline. These failures have included a lack of adequate oversight and management by DOE, in conjunction with a lack of timely technical work and associated management by DOE's contractors.</p> <p>DOE recognizes and agrees that due to these failures it stands in violation of M-45-03A requirements.</p> <p style="text-align: center;"><u>Resolution of Dispute</u></p> <p>Descriptions of Ecology and DOE positions regarding the state's disapproval of DOE's May 6, 1997 request for (M-45-03A) extension were presented at the Parties' August 26 1997 Inter Agency Management Integration Team (IAMIT) meeting. Since that time the Parties' have worked with one another in crafting this Dispute Resolution Agreement, and its associated additions to the C-106 path forward. Approval of this change request constitutes resolution of the Parties' dispute.</p>																					
<p><b>Impact of Change</b> Approval of this change request resolves the Parties' current dispute regarding interim milestone M-45-03A (RE: DOE's request for due date extension), and amends Tri Party Agreement tank 241-C-106 requirements consistent with current TWRS program logic and planning.</p>																					
<p><b>Affected Documents</b> the <u>Hanford Federal Facility Agreement and Consent Order</u>, as amended, Project Hanford Management Contract (PHMC), e.g., PHMC Performance Expectations and Agreements (PE's and PA's), TWRS Multi Year Work Plan (MYWP), and associated DOE budget and planning documentation.</p>																					
<p><b>Approvals</b></p> <table border="0"> <tr> <td>_____</td> <td>_____</td> <td>___ Approved ___ Disapproved</td> </tr> <tr> <td>DOE</td> <td>Date</td> <td></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>___ Approved ___ Disapproved</td> </tr> <tr> <td>EPA</td> <td>Date</td> <td></td> </tr> <tr> <td>_____</td> <td>_____</td> <td>___ Approved ___ Disapproved</td> </tr> <tr> <td>Ecology</td> <td>Date</td> <td></td> </tr> </table>			_____	_____	___ Approved ___ Disapproved	DOE	Date		_____	_____	___ Approved ___ Disapproved	EPA	Date		_____	_____	___ Approved ___ Disapproved	Ecology	Date		
_____	_____	___ Approved ___ Disapproved																			
DOE	Date																				
_____	_____	___ Approved ___ Disapproved																			
EPA	Date																				
_____	_____	___ Approved ___ Disapproved																			
Ecology	Date																				

**Description/Justification of Change cont.**

In light of the preceding, Ecology and DOE agree as follows:

- A. That Tri Party Agreement interim milestone M-45-03A is not modified.
- B. That the following new Tri Party Agreement requirement is established by approval of this M-45-97-05 change request:

**M-45-03B: Complete Sluicing Retrieval of Tank 241-C-106 Wastes: July 1999**

Completion of sluicing retrieval shall be a mutual determination by Ecology and DOE that the limit of sluicing retrieval capability has been reached for tank 241-C-106, and that subsequent waste removal, if necessary to meet the retrieval goal of M-45-00, will be accomplished by alternative technology.

- C. That Tri Party Agreement target dates M-45-03T01 and T02 are modified by approval of this change request. These two target dates are established as interim milestones as follows:

**M-45-03C: Initiate Final Retrieval Demonstration of Waste Removal from Tank 241-C-106: February 2001**

This requirement will be met by the initiation of full scale residual waste removal following completion of sluicing retrieval operations (M-45-03B). This activity will be performed by a retrieval technology other than sluicing, and will demonstrate alternative retrieval systems for waste removal from tanks.

**M-45-03D: Complete Retrieval Demonstration of Waste Removal from Tank 241-C-106: February 2002.**

This requirement will be met on completion of waste removal from tank 241-C-106 to the reasonable and practical limits of technology as jointly agreed to by DOE and Ecology. This final waste removal shall be implemented using an alternative retrieval technology other than sluicing. See M-45-00 for a description of the required removal efficiencies.

- D. Nothing in this dispute resolution agreement shall prevent Ecology from assessing penalties, stipulated or otherwise, against DOE for violating M-45-03A.
- E. That DOE's Assistant Manager for TWRS will forward bimonthly letter reports to Ecology's TWRS Project Manager describing 241-C-106 project actions taken pursuant to the TWRS program critical path and logic, and whether or not DOE has/is maintaining adequate progress and compliance with interim milestones M-45-03B, M-45-03C, and M-45-03D. The signature block of these DOE determinations shall include the statement "The information contained within this report is complete and accurate to the best of my knowledge." Adequate progress is defined here as progress that is sufficient to meet (these) milestone requirements without shifting funds from other Tri Party Agreement required work.
- F. That maintaining adequate progress and compliance with interim milestones M-45-03B, M-45-03C, and M-45-03D is deemed a term of Part Two of the Tri Party Agreement (See Tri Party Agreement Part Two, Article IX, paragraph 31).
- G. That should DOE, at any time, determine that it is no longer maintaining adequate progress and compliance with interim milestones M-45-03B, M-45-03C, and M-45-03D, it shall immediately notify Ecology of such failure in writing.
- H. That on Ecology's receipt of such notification, stipulated penalties pursuant to Tri Party Agreement Part Two, Article IX shall automatically begin to accrue on a weekly basis, and shall continue to accrue until adequate corrective actions are agreed to by signature of the Director of Ecology and DOE's Manager of the Richland Field Office. Such stipulated penalties shall not be subject to the dispute provisions of the Tri-Party Agreement.

Change Number <b>M-45-97-05</b>	Federal Facility Agreement and Consent Order <b>Change Control Form</b> <small>Do not use blue ink. Type or print using black ink.</small>	DRAFT Date <b>September 23, 1997</b>
Originator <b>Ecology</b>	Phone	
Class of Change	<input type="checkbox"/> I - Signatories <input checked="" type="checkbox"/> II - Executive Manager <input type="checkbox"/> III - Project Manager	
Change Title	<b>Dispute Resolution Agreement: Tri Party Agreement interim milestone M-45-03A</b>	
<b>Description/Justification of Change</b> This M-45-97-05 change request constitutes a Dispute Resolution Agreement in the matter of the U. S. Department of Energy and its contractors (hereafter referred to as DOE) failure to meet the requirements of Tri Party Agreement interim milestone <u>M-45-03A: Initiate sluicing retrieval of tank 241-C-106 to resolve the high heat safety issue and demonstrate waste retrieval; October 31, 1997.</u>		
<p style="text-align: center;"><u>Compliance Issue description</u></p> <p>Interim milestone M-45-03A was established in January of 1994 as a key tank waste remediation system (TWRS) project requirement. Work required to meet M-45-03A has long been recognized as of primary importance in that it both: a) provides for resolution of tank C-106 high heat safety (and environmental) issues via waste transfer to more appropriate facilities, and b) represents a critical test and demonstration of waste retrieval technologies, and an important first step in building DOE's ability to retrieve Hanford tank wastes for processing. Unfortunately, slow DOE progress in meeting M-45-03A requirements due to technical and other difficulties has plagued this project to the point where DOE is now unable to meet the milestones' milestone's October 31, 1997 compliance deadline. <del>These failures have included a lack of adequate oversight and management by DOE, in conjunction with a lack of timely technical work and associated management by DOE's contractors.</del></p> <p>DOE recognizes and agrees that <del>due to these failures it stands in violation of</del> as of September 1, 1997, it will fail to meet M-45-03A requirements. <del>However, the Parties also recognize that there remains a material</del> question of fact, as to whether DOE is entitled to relief from performance of its M-45-03A obligations under the provisions of Article XL of the Hanford Federal Facility Agreement and Consent Order, as amended.</p> <p style="text-align: center;"><u>Resolution of Dispute</u></p> <p>Descriptions of Ecology and DOE positions regarding the state's disapproval of DOE's May 6, 1997 request for (M-45-03A) extension were presented at the Parties' August 26 1997 Inter Agency Management Integration Team (IAMIT) meeting. Since that time the Parties' have worked with one another in crafting this Dispute Resolution Agreement, and its associated additions to the C-106 path forward. Approval of this change request constitutes resolution of the Parties' dispute.</p>		
<b>Impact of Change</b> Approval of this change request resolves the Parties' current dispute regarding interim milestone M-45-03A (RE: DOE's request for due date extension), and amends Tri Party Agreement tank 241-C-106 requirements consistent with current TWRS program logic and planning.		
<b>Affected Documents</b> the <u>Hanford Federal Facility Agreement and Consent Order</u> , as amended, Project Hanford Management Contract (PHMC), e.g., PHMC Performance Expectations and Agreements (PE's and PA's), TWRS Multi Year Work Plan (MYWP), and associated DOE budget and planning documentation.		
<b>Approvals</b>		
DOE	Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
EPA	Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology	Date	<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved

**Description/Justification of Change cont.**

In light of the preceding, Ecology and DOE agree as follows:

- A. That Tri Party Agreement interim milestone M-45-03A is not modified.
- B. That the following new Tri Party Agreement requirement is established by approval of this M-45-97-05 change request:

**M-45-03B: Complete Sluicing Retrieval of Tank 241-C-106 Wastes: ~~July~~ December 1999**

Completion of sluicing retrieval shall be a mutual determination by Ecology and DOE that the limit of sluicing retrieval capability has been reached for tank 241-C-106, and that subsequent waste removal, if necessary to meet the retrieval goal of M-45-00, will be accomplished by alternative technology.

- C. That Tri Party Agreement target dates M-45-03T01 and T02 are modified by approval of this change request. These two target dates are established as interim milestones as follows:

**M-45-03C: Initiate Final Retrieval Demonstration of Waste Removal from Tank 241-C-106: February 2001.**

This requirement will be met by the initiation of full scale residual waste removal following completion of sluicing retrieval operations (M-45-03B). This activity will be performed by a retrieval technology other than sluicing, and will demonstrate alternative retrieval systems for waste removal from tanks.

**M-45-03D: Complete Retrieval Demonstration of Waste Removal from Tank 241-C-106: February 2002.**

This requirement will be met on completion of waste removal from tank 241-C-106 to the reasonable and practical limits of technology as jointly agreed to by DOE and Ecology. This final waste removal shall be implemented using an alternative retrieval technology other than sluicing. See M-45-00 for a description of the required removal efficiencies.

- D. Nothing in this dispute resolution agreement shall prevent Ecology from assessing penalties, stipulated or otherwise, against DOE for violating M-45-03A.
- E. That DOE's Assistant Manager for TWRS will forward bimonthly letter reports to Ecology's TWRS Project Manager describing 241-C-106 project actions taken pursuant to the TWRS program critical path and logic, and whether or not DOE has/is maintaining adequate progress and compliance with interim milestones M-45-03B, M-45-03C, and M-45-03D. The signature block of these DOE determinations shall include the statement "The information contained within this report is complete and accurate to the best of my knowledge." Adequate progress is defined here as progress that is sufficient to meet (these) milestone requirements without shifting funds from other Tri Party Agreement required work.
- ~~F. That maintaining adequate progress and compliance with interim milestones M-45-03B, M-45-03C, and M-45-03D is deemed a term of Part Two of the Tri Party Agreement (See Tri Party Agreement Part Two, Article IX, paragraph 31).~~
- GF. That should DOE, at any time, determine that it is no longer maintaining adequate progress and compliance with interim milestones M-45-03B, M-45-03C, and M-45-03D, it shall immediately notify Ecology of such failure in writing.
- ~~H. That on Ecology's receipt of such notification, stipulated penalties pursuant to Tri Party Agreement Part Two, Article IX shall automatically begin to accrue on a weekly basis, and shall continue to accrue until adequate corrective actions are agreed to by signature of the Director of Ecology and DOE's Manager of the Richland Field Office. Such stipulated penalties shall not be subject to the dispute provisions of the Tri Party Agreement.~~



## Department of Energy

Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

97-AMW-016

SEP 09 1997

Mr. H. J. Hatch, President  
Fluor Daniel Hanford, Inc.  
Richland, Washington 99352

Dear Mr. Hatch:

CONTRACT NO. DE-AC06-96RL13200 - SPENT NUCLEAR FUEL (SNF) PROJECT  
SCHEDULE

The SNF Project has made remarkable progress in the past two and one-half years, and noticeable improvements have been made since the PHMC contract commenced on October 1, 1996. However, delays have continued to occur which prevent meeting schedule commitments. While some delays can be attributed to new technical data, new safety requirements, and actions of other contractors, there continue to be delays due to poor quality technical work and poor project management and contracting practices.

FDH and DESH must take near-term decisive action if DOE is to achieve its objective at the K Basins: rapid removal of the spent fuel to safe, dry interim storage with a low cost mortgage. The following are needed at a minimum:

1. reinforce the fundamental project goal to provide safe, stable, low mortgage dry storage of the spent fuel as soon as possible;
2. provide in the immediate future a technically sound and well-documented basis for design and safety. Include this effort in the baseline;
3. seize the opportunity to simplify the designs of the buildings and the equipment to be used for fuel retrieval, processing, handling and storage operations such that operational reliability is ensured once fuel retrieval commences;
4. establish a sense of urgency with regard to the commitment dates for the project. FDH will be able to establish new baselines dates to reflect the delays that have occurred; there must be a buy-in by all project personnel to ensure commitments are met. Project management reports must focus on delivering information that permits intervention to avoid delays;

5. improve senior management understanding of the details of the project such that long delays are not encountered to resolve programmatic issues. The delay in Canister Storage Building construction due to two hoisting and rigging accidents involved excessive time for investigation. FDH and DESH have worked for almost four months on a baseline schedule change without issuing a final product;
6. commence an immediate senior management review with RL, weekly (or more often), to identify and resolve open issues affecting project success. This would include design simplifications, problems with closure of technical issues, and implementation of improved project management controls to establish status and identify problems;
7. resolve promptly critical decisions with regard to fuel conditioning and ensure that NUMATEC concurrence is obtained promptly on conditioning process matters;
8. immediately provide a date when RL can expect to see a finalized baseline change request to reflect the current delays; and,
9. commence the long overdue (scheduled to start May 1, 1997) full-element spent fuel testing in Building 324; this testing is important to fuel conditioning processes.

It is absolutely critical that FDH and DESH retain full accountability for technical direction and integration of all aspects of the project. RL considers that there is now a clear path forward for safe execution of the SNF Project; no major technical obstacles remain. It is expected that FDH and DESH will promptly establish a firm baseline for the project that will result in safe and reliable operations until its conclusion. The urgent risk represented by the spent fuel in the K Basins will not be alleviated until the project is complete.

Mr. H. J. Hatch  
97-AMW-016

-3-

SEP 09 1997

Please advise RL as soon as possible of the actions you are taking to address the matters discussed in this letter and its enclosure.

Sincerely,



C. A. Hansen, Assistant Manager  
for Waste Management

AMW:PGL

Enclosure:  
Report on RL Review of SNF Project  
Schedule

cc w/encl:  
H. E. Bilson, EM-65  
T. L. McConnell, DESH  
N. H. Williams, FDH

## REPORT OF RL REVIEW OF SPENT NUCLEAR FUEL PROJECT SCHEDULE

### *Executive Summary*

On August 18, 1997, Fluor Daniel Hanford (FDH) provided RL with a proposed revision to the SNF Project schedule. This revision is the outcome of a several-month risk-based assessment by the FDH and Duke Engineering and Services (DESH) management team; it proposes establishing July 31, 1999 as the new date for start of K Basins fuel removal. This is 14 months later than the presently approved MYWP date and 19 months later than the DOE Implementation Plan for DNFSB Recommendation 94-1.

The RL Spent Nuclear Fuel Project commenced a detailed review of this proposed revision to the MYWP baseline on August 22, 1997. This review included members of the SNF Project staff and members of the SNF Project Technical Assistance Group (TAG) (see attachment 1). This is a report of the findings of the review and recommendations made by those involved. In the discussions that follow, the term "original" refers to the schedule approved in April 1995 which identified the start of fuel removal as December 1997, while "current" denotes the schedule approved in April 1997 identifying the start of fuel removal as May 1998 and "proposed" means the schedule which FDH and DESH have informally proposed to RL with a fuel removal start of July 1999.

The objectives of the RL review were to:

- Determine why the start of K Basins fuel removal has been delayed from the original schedule
- Assess the validity of the proposed new schedule and determine if it is realistic or if it could be improved upon.
- Identify options not considered in the proposed schedule that might expedite the removal of fuel from the K Basins at the earliest time

To achieve these objectives, RL and TAG members participated in a series of meetings with DESH sub-project managers, compiled and reviewed a line-by-line comparison of the current and proposed schedules, reviewed other supporting documentation, and held numerous internal discussions.

It is important for the contractors to note that there are inherent limitations in a review of this kind, conducted over a very short (two-week) time frame: it is necessarily a top-down, overview evaluation and does not include the insights which could be garnered from a thorough bottoms-up analysis. Further, the conclusions and recommendations

herein reflect the reviewers' broad experience and knowledge of the SNF project; they are not based solely on the information presented in the two-week review process.

Conclusions and recommendations are presented throughout this report. The following are key:

1. The primary causes of delay in the start of fuel retrieval operations are:
  - o Disorganized and poor quality technical basis
  - o Distorted (excessively conservative) safety analyses
  - o Extremely complex equipment designs (to accommodate distorted design and safety requirements).
  - o Weak project management and weak management of subcontractors

These are long standing problems at Hanford and to some extent was a legacy when the PHMC contract commenced on October 1, 1995. FDH and DESH have made improvement in all areas over the past year; however, the delays now proposed highlight the need for urgent additional substantive action. The above deficiencies are not the only problems leading to the proposed delay. RL recognizes that the original schedule had no technical or safety basis when it was established. Nor did the very optimistic testing and training times reflect the actual facilities and equipment that will be used. RL considers, however, that correction of the primary causes of delay noted above will have a substantial positive impact on minimizing testing and training time required and will ensure the most prompt completion of the fuel and sludge removal tasks.

2. There is little basis for confidence that the proposed schedule can be achieved or improved upon.

The FDH and DESH proposed schedule was provided to RL with the caveat that a low aggregate probability existed (less than one chance in five) of moving fuel by the scheduled (July 1999) date.

The proposed schedule has yet to be formally presented to RL and some DESH sub-project managers indicated that it was not yet fully revised. They also indicated that it was not fully resource loaded, and may not represent the fastest possible schedule for non-critical path activities. RL found no evidence that a detailed bottoms-up review was conducted by DESH to provide the needed confidence to ensure validity.

All DESH sub-project managers did not appear to own the milestone commitments made by senior management in the current schedule. Thus, contractor acceptance of an accelerated program to place spent nuclear fuel in dry storage cannot be said to have been complete. It is crucial now to establish a schedule to which all Project

personnel are committed. It is also critical that all project personnel understand the urgent need to remove the fuel from the vicinity of the Columbia River and the importance of completing this task so that other important cleanup work can proceed.

The proposed schedule process elements are the same as in the current schedule. It allocates additional time to many tasks, where experience has shown that to be necessary, and it includes some new tasks omitted in previous versions, but it follows the same basic path as before. There is no question that additional time is clearly warranted to get the job done correctly and safely; construction of the Cold Vacuum Drying Facility is six months behind schedule and experience and new design information clearly show the need for additional testing and personnel training and certification time. Correction of the primary causes of delays may not change the start of fuel removal from the basins, but will certainly reduce the risk of additional delays and provide a real opportunity to succeed in achieving the completion of fuel retrieval on time.

3. A sound technical baseline - for safety, design and operations - must be established, regardless of the path forward adopted by management.

RL considers that the deficiencies in engineering baseline and safety analysis work will continue to lead to problems, errors and delays. Correction of these is not optional; whether FDH/DESH chooses to continue with the current technical path forward or a more innovative approach (major technical simplification), completion of high quality baseline engineering and safety analysis documents are prerequisites to success. Poor technical integration, and disorganized and distorted safety analysis and design work, have been real problems since project inception. FDH and DESH recognized this during transition to the PHMC contract yet corrective action progress has been much too slow.

4. Improved project management and management of subcontractors is required.

RL considers that without greatly improved project engineering and improved management of subcontractors that the risk of additional delays is high. The CVD is the most obvious example of weak performance in both areas. FDH and DESH also identified this problem at commencement of the PHMC contract and some corrective actions have been taken. However, there is a clear need to improve project baseline and project management discipline. In addition, there appears to be a lack of urgency to meet commitment dates for the project. Working with the end in mind it would appear that there would be serious excitement about missing dates at the project level since there are downstream impacts on testing and operations organizations. However, the approach seems to have been one of waiting for delivery of input and translating delays downstream. There also seems to be acceptance of the inevitability of delays if subcontractors do not perform. Such delays should be considered a failure

of the customer organization. Positive customer actions frequently improve subcontractor performance.

There is an immediate need for FDH and DESH to be able to provide RL with clear concise reports of potential delays such that time remains to take corrective actions. RL will commit to near term TPA enforceable milestones in upcoming negotiations; the TPA requires significant advance notice of milestone delays.

5. Serious technical and management consideration should be given to aggressive simplification of SNF systems and components.

The reality of a substantial project delay - more than a year, with little potential for recovery (based on the FDH/ DESH proposed schedule) - presents the opportunity for beneficial, cost-effective simplification. A prime candidate is the elimination of the requirement for inerted storage, and the attendant simplification of the Multi-Canister Overpack (MCO), MCO Handling Machine (MHM), and Canister Storage Building (CSB) storage tubes.

RL also considers it essential that FDH and DESH promptly establish the feasibility of using one conditioning step as laid out in the proposed schedule. It is crucial that the work on fuel conditioning proceed on an urgent basis and while short term delays to investigate the right technical approach may be warranted, it is critical to maintain progress on this important part of the project.

The incentives for aggressive simplification include:

- Restored ability to achieve the desired end-state (i.e., safe, low mortgage, extended term storage).
- Reduced vulnerability to schedule delays due to equipment delivery, Startup and Test (SU&T) problems, added operator training requirements, and the potential to recover some of the front-end schedule loss.
- Lower capital cost of systems and equipment.
- Improved safety for operations

RL considers that these improvements would prove to be cost and schedule beneficial, over the life of the program, but more importantly, would provide for more reliable and safe operation. However, in view of the advanced state of engineering and design work, it is clear that there may be some front-end penalty (cost and schedule) associated with this approach. Therefore, a decision to adopt this approach must be based on a technically thorough, high-priority evaluation. RL strongly urges that such an evaluation be conducted and completed promptly.

In summary, the RL review resulted in a conclusion that there is a legitimate need for schedule extension, in order to complete the project in accordance with the current path forward approach. There is not enough information to validate the projected (14-month) slip, but RL concurs that an extension of that approximate length will be required. RL is concerned that, unless positive actions are taken to address the root causes of the delays experienced so far, continued slippage is possible. Further, it is the review team's view that some changes to the path forward – particularly simplifications to systems and equipment – should be considered and may result in improved cost, schedule and technical performance once fuel retrieval commences.

This report is presented in a series of "layers"; the Summary above contains the main points, while the Sections below address the three objectives of the RL review and the Attachments provide somewhat more detail on some aspects of the review.

## SECTION 1- UNDERLYING CAUSES OF THE 14 MONTH SCHEDULE DELAY

Based on RL's review of the proposed schedule information and on its broader understanding of SNF Project issues, it concludes that the primary causes of the projected schedule slip are:

- Disorganized and poor quality technical basis. For example, several key parameters, for which overly conservative values have been used in safety analyses, are being revised very slowly; these issues were formally documented nine months ago.
- Distorted (excessively conservative) safety analyses. For example, settling due to gravity is not accounted for and, in some cases, arbitrary and very large ( $10^6$ ) factors are sometimes applied to parameters "for conservatism".
- Because of the above, many designs are unnecessarily complex. For example, the MHM has been designed for full inerted containment of the MCO during transfer and handling operations; this design complexity has led directly to delays in engineering, fabrication and delivery of the unit.
- Weak project management and weak management of subcontractors. Delays in completion of the CVD facility can be attributed to poor implementation of Quality Assurance requirements and the poor quality of vendor engineering.

Additional factors have contributed to the schedule delay. These include:

- Inadequate time allocated to some portions of the current schedule; e.g., in the Operational Readiness Review area
- Some necessary tasks were not incorporated in the current schedule; e.g., operator training
- Sub-contractor relationships in at least one sub-project are not conducive to a fast track schedule; e.g., five fixed price FRS subcontractors each with a piece of the system

Finally, it is noted that the original project schedule was very ambitious (intentionally so); the aim was to move work along faster by setting a very tight target. To some degree, the proposed schedule corrects this situation by making key durations more realistic; it now reflects a safety basis and design basis that did not exist earlier. Further, it appears that contractor management was not entirely committed to either the original (December 1997) or the current (May 1998) start-date. For example, one sub-project manager asserted that the original schedule was widely regarded as completely unrealistic, and another asserted that the changes that resulted in the May 1998 start date did not go far enough. While this is significant, it is not considered by RL to be the primary reason for the delay.

## SECTION II-ASSESSMENT OF THE PROPOSED SCHEDULE

The RL review team reviewed and evaluated the proposed schedule primarily through a series of topical review meetings, during the week of August 25-29, with the DESH sub-project managers and other involved project personnel. The team's observations and conclusions from these review sessions are summarized in this section, with elaboration in some cases provided in attachments to this report.

### *OVERALL OBSERVATIONS REGARDING COMPLETENESS AND CREDIBILITY*

The proposed schedule, as reviewed, is not complete. (And in fact, it has not been advertised as such; the contractor has not yet formally presented this schedule to DOE.) Further, there seems to be little basis for confidence that the new schedule, as proposed, can be achieved or improved upon.

Specifically:

- It is not yet completely man loaded or resource loaded, and level 3 is not yet linked to level 4. FDH issued a letter to DESH last week that required formal changes to the baseline to remedy problems of this nature. The review team found no evidence that it incorporates detailed bottoms-up review needed to provide confidence in its validity.
- The FDH Ares risk assessment assigns only a 17% probability of moving fuel by the rescheduled (July 1999) date. While clearly a qualitative estimate, the low confidence is a major concern; FDH reported this when presenting the proposed schedule to RL.
- The proposed schedule process elements are the same as in the previous one. It increases the time allocated to many tasks (where experience has shown that to be necessary) and it includes some tasks that were not shown in previous versions, but it does not incorporate significant changes to path forward or process. In the absence of positive steps to resolve the causes of the slippage, the vulnerability to schedule upset will remain high and the delays of the kind experienced before are likely to persist.
- There are some items off the critical path that are delayed for no apparent reason.

It seems illogical to keep delaying work when it can be completed sooner. Such delays will only lead to complications later in the project. RL was unable to determine whether these are legitimate delays and what effect they have on the overall outcome.

- Although the proposed schedule has not been implemented, some tasks are already lagging their "new" start date. In fact, it is not clear what schedule project personnel are following at this time.
- FDH has not yet identified to RL the key drivers that force the 14-month schedule delay. FDH has committed to providing such an analysis to RL.

#### ***TECHNICAL BASELINE, INCLUDING ENABLING ASSUMPTION (EA) RESOLUTION AND CHARACTERIZATION***

As noted in Section 1, the yet-incomplete SNF Project technical baseline is considered by the team to be a primary contributor to the schedule slippage. Observations regarding the technical baseline, as regards the proposed schedule, are:

- Although there has been progress in establishing and documenting the technical baseline this fiscal year, work is still not complete and is prerequisite to successful engineering and design. Completion of this vital technical baseline work appears not to be scheduled (with the exception of the EA resolution, as discussed below), and should be.
- The proposed schedule does include resolution of high priority EAs. However, most of these are normal engineering work tasks, technical input or design requirements, that are identified and tracked for configuration control purposes. As scheduled, they are incorrectly linked to characterization work (all EAs can be resolved without characterization), setting up the potential for unnecessary delays.
- The point has repeatedly been made by RL that the safety basis does not depend on characterization testing. This has been the case since May 1996 and has been agreed to by the contractor. Accordingly, no safety-related activity should be dependent on the completion of characterization testing, and schedules should be revised accordingly.

Attachment 2 is a summary of the high priority EAs and their significance.

## SAFETY ANALYSIS

As noted in Section I, the team considers safety analysis problems – both in content and process – to be significant contributors to the schedule slippage experienced so far on the project. In some respects, these problem areas persist in the proposed new schedule.

### Observations:

- The underlying problem of excessively conservative safety analyses (see Section I) remains. The proposed schedule doesn't show these being repaired.
- The proposed schedule reflects the revised safety authorization process conceptualized recently in the Key Drivers assessment<sup>1</sup>. This process is an improvement, in that it addresses some of the difficulties experienced with the earlier "phased Safety Analysis Report (SAR)" approach, but it doesn't completely fix the problem and it introduces some new ones. Specifically:
  - The new plan still calls for multiple SARs, in several phases. There has been some consolidation and the magnitude of the problem is much lower than before, because most of the phased SARs have already been produced. However, the obvious flaws in the multiple phased SAR approach - inconsistencies, parallel review paths, overlaps, need for backfitting - could be avoided by consolidating all of the remaining SARs into two documents.
  - Per the schedule, the MCO Topical (considered to be a SAR) will not be available in time to support preparation of the other, related SARs.
  - The process introduces a new product, the Safety Analysis Document (SAD), which is not adequately defined or scoped and seems not to be well understood by users. This needs to be resolved soon to avoid inefficiencies and delays in implementation.
  - The schedule reflects a "requirement" for DOE approval of a SAD (or a PSAR-like document) prior to FRS equipment immersion in the K-Basin. The basis for this requirement is not clear, and it seems to add little or no value.
- Several safety analysis tasks are linked, per the proposed schedule, to characterization work. These links are not valid and should be deleted.
- There is a need to carefully assess the schedule for FSAR issue on the project to ensure that information required for training operations personnel is available in a timely fashion.

---

<sup>1</sup> Key Drivers Resolution Committee Agreements document, dated August 15, 1997

Attachment 3 is a summary of the necessary changes to the technical baseline and the safety analysis.

### **CONDITIONING PROCESSES**

Per the proposed schedule, Cold Vacuum Drying (CVD) is the critical path for the entire project. The team concurs that CVD is likely to be the pacing sub-project and is vulnerable to further delay, based on experience to date. At the same time, the schedule proposes to delay engineering work on the Hot Conditioning System (HCS), apparently awaiting the completion of an evaluation underway to determine whether HCS can be eliminated altogether. This decision should not be based on lack of budget. Completion of fuel conditioning is mandatory for safe, low mortgage interim storage of the fuel unless (and until) the contractor can show that this can be achieved with CVD alone.

Alternative conditioning process concepts, involving elimination or modification of either CVD or HCS, must be evaluated in an integrated way. For example, consolidation of all conditioning into a single step at the HCS facility is a previously identified and potentially attractive alternative to HCS elimination. In view of the critical path nature of the CVD work, it seems advisable to evaluate that alternative before it is precluded by HCS delay. Similarly, elimination of HCS may place additional performance requirements on CVD (which would then be the only treatment step), that could adversely affect the overall schedule.

For that reason, RL considers that an integrated evaluation of conditioning process alternatives (including elimination of either HCS or CVD) be conducted as soon as possible, prior to delay of HCS.

### **IN-BASIN TASKS**

RL reviewed both the Integrated Water Treatment System (IWTS) and the Fuel Retrieval System (FRS). The following was observed:

- There is significant uncertainty (perhaps inherent in the nature of water treatment projects) regarding IWTS performance. The schedule should include adequate time for functional testing, operational trial-and-error, and resultant corrective action. Allocated time frames in the proposed schedule seem insufficient for that.
- The MCO Loading System (MLS), a part of FRS, is a highly automated basket loading system. The review team did not look at this in detail, but raises the question of system reliability and its effect on schedule. It is critical that operations personnel review designs well in advance of receipt such that operability is assessed in time to implement any needed improvements.

## ***CANISTER STORAGE BUILDING (CSB)***

The CSB is well along in construction, and its completion is unlikely to impinge on the project critical path. The only review team observation of consequence, with respect to CSB aspects of the proposed schedule, regards the delivery of storage tube covers. As shown in the proposed schedule those deliveries will be late in the project. Given the complexity of the tube cover design, it would be prudent to provide substantial margin in the delivery schedule.

More broadly, there is very substantial complexity in the CSB design, particularly with respect to the systems and equipment required for storage tube inerting, and also those related to safety grade HVAC systems. These complexities will affect plant capital cost (the ~200 storage tube covers are presently estimated to cost \$40K each, exclusive of hold-down attachments), but are unlikely to have any perceptible effect on project schedule. Their most significant adverse effect will be on operation and maintenance cost and efficiency. Opportunities for improvement are discussed in Section III.

## ***MCO HANDLING MACHINE (MHM)***

The MHM is an exceedingly complex machine. Engineering and fabrication of the MHM have already been the cause of schedule slippage. The proposed schedule presumes that the basic MHM configuration will remain unchanged. In that case, continued difficulty with fabrication, testing and operation can be expected and should be accommodated in the schedule.

The review team's detailed comments on the MHM portion of the schedule are provided in Attachment 4. In summary:

- The allocated time for acceptance testing, turnover and startup/operational upsets appears insufficient, given the complexity and experience to date with the MHM.
- There is an effort underway to determine if the MHM inerting and sealing requirements can be eliminated. This is a very positive step and is likely to reduce the MHM complexity and its schedule implications. However, presuming a satisfactory conclusion of that work, some engineering effort will be required to incorporate the results; that work should be anticipated in the schedule.
- The recent Newport News design review of the MHM made recommendations regarding elimination or simplification of interlocks and controls. These also have the potential to yield long-term benefit, but their near-term schedule implications need to

be evaluated.

A discussion of possible major simplification of the MHM is provided in Section III.

### ***KW AND KE BASINS WORK SEQUENCING***

The current schedule calls for an eight-month stagger between the start of K-West (KW) fuel removal and that in K-East (KE); the proposed schedule would reduce that interval to six months.

It is critical that the timing of work in both basins be sequenced such that proper management and supervisory attention can be provided to both operations simultaneously.

It is also essential that there be substantial time between KW and KE operations to maximize opportunity for feedback on design, installation and operational lessons-learned, and also to minimize competition for staff resources in construction, testing and operation.

In conducting its schedule review, RL found several circumstances where the six-month stagger may be problematic:

- FRS construction/installation work in the two pools, as scheduled, will be overlapping
- Training and Startup and Test (SU&T) work will be overlapping, both between basins and also with CVD and CSB SU&T.
- The planned start of fuel movement in KE will coincide with the planned acceleration (to five MCOs per week) in KW. This will be a severe management challenge.
- Six-month stagger is not sufficient to permit any meaningful KW operational experience to be factored into the KE design work. Much greater stagger, perhaps to the point of sequential (rather than parallel) basin operations would be required to accommodate that but this may not be possible due to schedule constraints. It is clearly not contemplated by the proposed (or current) schedule. The contractor should reassess the stagger interval so as to optimize feed back, management control and task duration.

Opportunities in this respect are discussed in Section III.

### ***OPERATIONAL READINESS REVIEW AND STARTUP***

The proposed schedule allocates significantly more time for Management Self-Assessment (MSA), contractor ORR and DOE ORR than the current schedule. The team concurs that this is realistic.

The primary area of concern noted by the team in this area is the overlap in SU&T (particularly the dry runs) for FRS, CVD, CSB, as noted above. More details are provided in Attachment 4.

---

In summary, RL concludes that there is a legitimate need for schedule extension, in order to complete the project in accordance with the current path forward approach. There is not enough information to validate the projected (14-month) slip, but the team concurs that an extension of that approximate length, or longer, will be required. RL is concerned that the proposed schedule appears not to incorporate positive actions to address the root causes of the delays experienced so far; therefore, continued slippage is possible.

## SECTION III - AN ALTERNATIVE APPROACH

Based on its conclusions regarding the causes for the SNF Project schedule slip and the uncertainties associated with the proposed new schedule, RL recommends that consideration be given to several changes to the proposed approach. These are outlined in this section. A prerequisite to the success of this alternate approach is correcting the primary causes of the project delay as discussed in Section I of this report.

A project delay of a year or longer presents the opportunity for beneficial, cost-effective simplification. The evolving designs of SNF systems and equipment (particularly the MHM, the MCO and the CSB /HCS) are excessively complex, to the degree that they do not support the top-tier objectives of long term, low cost operation and maintenance. More importantly the complexities threaten the overall system reliability and, potentially, safe operations. Success of the project depends heavily on reliable long-term operation of this equipment.

The RL team believes that these improvements would prove to be cost and schedule-beneficial, over the life of the program. However, in view of the advanced state of engineering and design work, it is clear that there would be some front-end penalty (cost and schedule) associated with this approach. Therefore, a decision to adopt this approach must be based on an objective, technically thorough, high-priority evaluation. The RL team strongly urges that such an evaluation be conducted.

The following simplification opportunities are suggested as having high potential:

- Conduct all conditioning (de-watering, and cold and hot conditioning) in a single step, at the CSB. (An evaluation of the relative merits of this approach should be conducted right away and prior to any decision to defer HCS engineering).
- Eliminate the requirement for inerted storage and handling of MCOs.
  - Utilize the available visual fuel inspection information (principally for KE, but to a limited extent also for KW) together with information obtained in the course of characterization, to revise downward the safety-basis MCO sludge loading of 300 kg.
  - Generate from this analysis an improved (more realistic) MCO sludge probability distribution function (pdf). This pdf will allow for reasonable, yet conservative, estimates of expected (i.e., design basis) MCO sludge loading as well.
  - Make a realistic assessment of the pressure-holding capability of a welded closure MCO, which will be significantly greater than the current design value

- of 150 psi.
- Based on the above, demonstrate that an MCO cannot credibly be over pressurized ( $< 10^{-6}$  probability) and that pressure relief devices are not necessary.
- This will permit major equipment simplifications as follows:
  - Simplify the MIM design, eliminating features for inerting, sealing, and pressure tolerance.
  - Simplify the CSB design, including elimination of equipment and operational provisions for maintaining inerted storage tubes, and elimination of accident HEPA filters and ESF HVAC.
- Increase the schedule stagger between KW and KE operations, to make it possible for the lessons learned in the first (KW) application – including design, installation, testing and operation – to be applied to the subsequent (KE) work.

Further detail on these opportunities for simplification is provided in Attachment 6.

RL's recommendations are based on the premise that it will be possible to make technically sound simplification decisions in a 1 - 2 month time frame. This will require concerted, objective effort on the part of the contractor. Despite short term adverse schedule impact (i.e., introduction of new engineering work and delay or change to ongoing work), the proposed major simplifications have the potential to yield reduced overall cost, equivalent or improved overall schedule (compared to DESH proposal) and reduced vulnerability to further delay.

## Attachment 1 - RL Schedule Review Participants

The following participated in the RL review of the SNF Project Schedule:

C.A. Hansen  
E.D. Sellers  
P.G. Loscoe  
J.C. DeVine (TAG/Polestar)  
J.D. Trotter (TAG/Polestar)  
R.M. Hiegel  
W.L. Smoot  
F.M. Roddy  
A. Mehta (EM-60 Rep)  
R.N. Warren  
J.J. Allen<sup>2</sup>

---

<sup>2</sup> Part time

## Attachment 2 - Enabling Assumptions

Enabling Assumptions are technical inputs that are needed for safety analyses but have not been finally determined and documented. The contractor currently indicates that there are 92 Enabling Assumptions (EAs) being tracked to closure. However, the latest listing of these EAs, Rev. 3 dated August 21, 1997, shows only a total of 86.

These EAs have recently been reviewed and placed into three categories: Category 1, High Programmatic Risk/Impact; Category 2, Lower Impact/Data Development and Analysis Ongoing; and Category 3, Close Now. There are currently 19 EAs in Category 1, 31 in Category 2 and 36 in Category 3.

Many, if not all, of the Category 1 EAs can be closed now (or within a few weeks, including time for a documenting the basis for closure). For example:

EA-001, *"Maximum particulate content of 300 kg to remain in MCO. Maximum particulate quantity of 160 kg in MCO during CVD and transport."* This has already been shown to be an incredible amount of particulate. Furthermore, if flaws in the analysis on which this conclusion is based were corrected, that amount of particulate would be even more incredible.

EA-012, *"CSB design approach is based on maintaining fuel conditions such that a runaway reaction of the fuel with water or air is precluded."* Existing (albeit recent) analyses show that, even with very conservative assumptions on sludge/water content and exposed fuel surface area, a runaway reaction cannot occur. With a more realistic but still conservative sludge content, such an event is incredible.

EA-013, *"CSB design approach is based on maintaining an inert environment in the MHM..."* This is a design requirement that is currently in place. It is not an assumption.

EA-021, *"Runaway reactions and fuel ignition are precluded by limiting fuel temperature, water and air."* This is essentially the same as EA-012.

EA-066, *"The blowdown and particulate release from the MCO pressurization are estimated conservatively from the blowdown model."* In view of the fact that the blowdown model ignores gravity and agglomeration effects, assumes the sludge is as radioactive as the fuel, considers the entire sludge inventory to be at risk and all of it to be respirable, and includes an arbitrary factor of one million on the resuspension factor, it is safe to say that the current blowdown release

calculation is conservative. A more realistically conservative calculation should be promptly done, after which this EA can be closed.

EA-052, *"Uranium corrosion reaction rates are derived from WHC-SD-SNF-TI-020."* This assumption is, essentially, that the uranium reaction rates are given by the widely used Pearce correlations with a factor of 10 included to insure they are conservative. The contractor plans to close this EA by verifying, through characterization work at PNNL, that measured rates are within the bounds of Pearce times 10. In view of the very few samples to be tested, applicability of the characterization results will be questionable at best. That is, the uncertainty associated with the measurement of the behavior of a few samples out of hundreds of thousands of potential samples is unlikely to have any more statistical validity than the use of the world body of data with a factor of 10 included.

In addition to EA-013, several other EAs (-044, -055, -063, and -078, -091, -092) are design or procedure requirements. For the purpose of preparing safety documentation it seems appropriate to "close" the design requirements by incorporating them into the appropriate system specifications. The system design is then unacceptable if it doesn't comply with specifications. Procedural requirements can be handled similarly.

The majority of the remaining (Category 2 and 3) Enabling Assumptions are either closed or will be closed in the near future. However, some of these EAs are inappropriately tied to the completion of some characterization work. For example, EA-007, *"Particulate contains same radionuclide content as fuel"* indicates that it "needs characterization of particulate". More correctly stated, the enabling aspect of this assumption is that the particulate is not more radioactive than the fuel. It is currently assumed in the accident analyses that the radionuclide content of the particulate is that of the fuel (appropriately decay corrected). Since it is inconceivable that the sludge could contain more activity than the fuel from which it came, especially in view of the fact that most of the soluble nuclides ( $^{137}\text{Cs}$  and  $^{90}\text{Sr}$ , which comprise about 40% of the fuel activity) have been removed, characterization cannot invalidate this assumption.

Similarly, EA-039, *"SNF fuel particulate behavior is consistent with or bounded by data from all models used"* refers to the need for particulate characterization. It is unclear what measurable property of the particulate could possibly invalidate the conservative assumptions used in the analyses: notably that 100% of the particles are respirable and the radionuclide content is the same as that of the fuel.

## Attachment 3 - Necessary Improvements to Technical Design Basis and Safety Analysis

1. The following actions are required to identify, quantify and document the technical parameters needed to finalize the project safety analysis and design work. These include:

- Sludge distribution (quantity of sludge loaded in MCOs)
- Water content of sludge
- Sludge drying characteristics
- Thermal decomposition of uranium hydrates in sludge
- Release rates of bound water, due to radiolysis
- Uranium-Oxygen and Uranium-Hydrogen reaction rate relationships
- Reactive surface area in the MCO
- Free volume in the MCO
- Reaction temperatures
- MCO particulate content (for blowdown analysis)
- Release path geometry inside and outside the MCO)

In each case, as has been pointed out by RL and by the Technical Baseline Validation Team, it is necessary to assess the technical basis for the parameter in question, and determine whether there is sufficient existing data to select firm values for safety and design. The combination of information currently available from the technical literature and, to a limited extent, from characterization and testing work is likely to prove adequate to establish a full set of firm, defensible parameters for safety and design. While this has been in progress since late last year, it is not yet complete.

2. Establish a clear project position regarding the margin / conservatism required for safety and design calculations.
3. Revise the SNF Project safety analyses, using more realistic assumptions, calculation models and consequence analyses to provide a meaningful portrayal of the safety risk of SNF Project facilities. Address accident consequences in a complete way, taking into account physically based phenomena. In particular:
  - Review calculation models for completeness. For example, the current off-site calculation predicts dose effects at 15 to 18 kilometers from a momentary MCO relief of cold-gas borne particles. Such dispersion is not physically reasonable. The calculation model should be expanded to include all natural removal mechanisms that can be reliably credited. Gravitational settling inside systems and structures is the most obvious of these reliable removal mechanisms.

- Eliminate excessive conservatism. This is a judgment call, and conservatism in safety analyses is clearly appropriate. However, use of a factor of  $10^6$  for unspecified reasons in the calculation of offsite dose is not called for.
- Reexamine the analytical (and management) approach for protecting "collocated workers". For example, it may be cost- and safety-effective to calculate on the basis of actual worker locations (instead of an arbitrarily assumed distance from the plant) or to consider reclassification and qualification of the nearest workers to be part of the emergency response organization

## Attachment 4 - MCO Handling Machine (MHM)

The following comments are principally based on discussions with DESH( McNeil) and review of the proposed schedule.

1. The MHM fabrication schedule has slipped approximately 9.5 months. This is due in part, (3.5 months) to the time expended to complete the design for the hoist. The design activity was completed on 8/15/97; however, Foster-Wheeler (FW) has not awarded the contract to fabricate the hoist assembly. FW is considering awarding the contract to GEC, which is purported to be a cost and schedule savings.
2. The schedule has also expanded to include a two-month window to allow for shipment of the assembly to England for fit-up prior to delivery of the complete assembly to Richland for assembly and installation in the CSB.
3. The rest of the schedule slip is a result of the non-availability of the sub-contractor to perform the hoist fabrication. FW lost the window due to the design problems.
4. The current schedule does not address the failure modes and effects analysis (FMEA) for the hoist and grapple system. This activity is supposed to run concurrent with the first three weeks of the engineering effort. Net result, no impact.
5. The 6/9/98 date for MHM Fabricate/Assembly/Deliver is based on a window of activity of 8.2 Months. The work allotted to that activity is:

- 6 weeks engineering
- 24 weeks fabrication
- 1 week ship to England
- 8 weeks fit up
- 5 weeks ship assembly to Richland

---

44 weeks total or 11 months

McNeil stated that part of the engineering activity has started and the drop-dead date for start of the work to meet the 6/9/98 date is 9/1/97.

## Attachment 5 - Startup and Operational Readiness Review

The following comments are principally based on discussion with Chris Thompson and Cherri Defigh-Price and review of the proposed schedule:

1. The operational procedure development activity is dependent on the sub-projects providing their completed designs, manufacturer's requirements, and draft operational documents to Startup.

The current input from projects to Startup was not sufficient to support the May start date. According to Thompson, the current schedule is achievable if they get the procedure input from the projects as required.

2. Procedure development and operations training is also dependent on the development of the Technical Safety Requirements (TSRs), Operational Safety Requirements (OSRs), and Limiting Conditions for Operations (LCOs). These, in turn, are dependent on the development of the SAR. The current schedule starts training before the SAR is approved. There is an element of risk with this, as training may have to be repeated if there are significant changes in the preliminary safety requirements for operations due to changes in the SAR.

3. The current schedule does not allot any time to address problems that may come up as a result of pre-operational testing (Acceptance Test Procedures (ATPs) and Operating Test Procedures (OTPs)).

4. The current ORR preps activity is predicated on validating only a portion of the operating procedures. At the present time, DESH has three categories of procedure validation: prior to ORR, prior to use, or use J-1 work procedures and develop procedures at a later date. The basic justification is the routine use of the procedure, however, criteria for the decision process has not been formally defined or justified.

5. The current 40 working days for the complete Contractor and DOE ORR activity is not sufficient time to complete all required activities. This time period only allows two weeks for the contractor ORR. If the DOE ORR is two weeks and its purpose is to validate the contractor ORR it would seem that the Contractor activity would be deeper in scope and naturally take longer. This period also does not allow for DOE-RL validation of contractor corrective actions taken as a result of the contractor ORR.

6. The overall time commitment for the start-up activity in the new schedule is longer. In response, it was stated that the time durations in the submitted schedule in support of the May date was longer than that approved by management. Start-up was

told that the requested time was unacceptable and that they would have to trim the schedule.

7. There is an overlapping of the three major activity dry run/certifications. While there are sufficient planned staff to perform the dry runs, there will not be enough procedure writers to address issues that result in procedure modifications.

8. The planned schedule shows that installation of the CSB plugs/impact limiters will not be completed until 5/18/99. This activity will be going on during the period that Start-up will be trying to run training and dry runs. With the cranes and support equipment on the CSB floor, the operations crew will not be able to run the MHM and perform their required activities.

## Attachment 6 - Opportunities for Simplification

The following are candidates for simplification that should be considered:

1. Finalize SNF conditioning requirements, and consolidate the CVD and HCS into a single step.

Presently, there are two related sets of problems in the design and development of the SNF Project conditioning systems:

- The key conditioning process parameters (temperature, pressure and time) for hot conditioning (HCS) have not been finalized. Preliminary values are being used, but there are open questions remaining. Concerns have been raised regarding the advisability of bulk conditioning (HCS) of an entire MCO of fuel at very high (~300C) temperature.
- CVD was conceived as a way to protect the critical path schedule, by permitting temporary staging and off-line hot conditioning. However, as it has evolved, the CVD itself is a large, complex, expensive and critical path facility. Further, temporary staging adds complexity to the overall process, and the double handling (associated with two-step conditioning) adds equipment, time and cost.

These problems should be attacked in a parallel, coordinated manner. The proposed action items are:

- 1.1. Evaluate, on an urgent basis, the suitability of conducting single-step treatment of the SNF at the K-Basins (in the CVD facility). This single-step process is presumed to be conceptually similar (or perhaps identical) to the existing CVD process; therefore, the evaluation must determine whether or not that limited process will achieve the required end state. As an alternative, consideration could be given to ways of modifying the CVD process (e.g., by increasing the CVD temperature), such that it would constitute sufficient processing without follow-up HCS.
- 1.2. Similarly, evaluate the merits of consolidating the current cold vacuum drying and hot conditioning in a single step, to be conducted in the HCS station at the CSB. In this scenario, the fuel would be transported wet from the K Basins to the CSB, and would be dried and conditioned prior to storage. (There would be no staging period.) Therefore, de-watering capability at the CSB would be required, as would an acceptable means of returning the water to the basins or otherwise disposing of it. The SARP may also require some revision.

- 1.3. For both scenarios, the maximum conditioning temperature should be reexamined. A lower final temperature for HCS (e.g., between 170C and 200C, a temperature higher than any MCO in storage will ever reach) may produce acceptable bound water removal without the practical difficulty and potential safety concerns associated with 300C operation. Similarly, a higher temperature at CVD (i.e., higher than 50C) may increase the likelihood that CVD alone can be shown to be sufficient.

Note that the recently announced plan to delay HCS for one year cannot be accepted by RL, unless and until there is clear evidence (via the evaluations outlined above) that the CVD-only option is technically viable and will achieve the requirement for low mortgage interim storage.

## 2. Simplify the design of CSB systems.

Based primarily on the recommended safety analysis revisions, there are likely to be CSB simplification opportunities, which can yield long term operational cost savings. These are:

- Elimination of requirement for storage tube inerting
- Elimination of storage tube shield plug hold-downs
- Elimination of accident response filters and fans

The opportunities in this area are constrained by the advanced state of CSB engineering and construction. Clearly, any potential savings will have to be weighed against the costs of re-engineering, contract changes and physical modifications (if any). Time is a key factor here, because CSB construction is proceeding and because any changes must be accomplished without impacting the critical path. For that reason, RL recommends immediate action to identify and conceptualize CSB simplifications.

## 3. Simplify the design of MCO.

The SNF Project will be building, testing and operating more than 400 MCOs; there is huge economic leverage on simplification. RL recognizes that the MCO design is nearly complete and changes will require time and effort. Nonetheless, the cost and reliability advantages warrant that another look should be taken at simplifying the MCO design, fabrication, and operations, consistent with the desired end point of sealed MCO storage with no pressure relief and no continuous monitoring.

Specifically:

- 3.1. Return to the original MCO closure concept in which the shield plug is welded to the MCO shell. This concept would eliminate the mechanical seal, threaded locking ring (and potential for thread galling between locking ring and MCO shell), and jacking bolts. The weld would provide the first of the two closure welds currently required for commercial SNF storage systems utilizing welded closures; the welded cover cap would serve as the second. Presuming NRC regulatory equivalency, this concept would allow storage of the MCO in the CSB storage tubes without inerting the tube or monitoring of the tube environment.

The following are additional opportunities for significant MCO simplification, with attendant savings in capital cost and operational efficiency. In each case, it is necessary to establish the technical basis and then implement the simplification:

- 3.2. Eliminate the MCO internal HEPA filters. In commercial nuclear applications, HEPA filtration is generally provided to reduce (or essentially eliminate) the release and transport of radioactive particulate material. In cases where safety analyses take credit for particulate removal to meet regulatory limits, the filtration system is safety grade. Since the MCO internal HEPA filters are not needed to satisfy regulatory limits, it appears that they can be eliminated.
- 3.3. Eliminate one penetration through the MCO shield plug. A review of the intended function of each MCO shield plug penetration during normal, off normal, and accident conditions indicates that at least one penetration is unnecessary and can be eliminated.
- 3.4. Eliminate the MCO pressure relief capability, consistent with the desired project end point. It is anticipated that the technical basis validation will confirm that MCO overpressure, sufficient to cause MCO loss of integrity, is not credible.

For each of the above changes pricing options to the awarded MCO fabrication contract should be obtained

#### 4. Simplify the design of the MHM.

The current MHM design is untenable. Substantial simplification is needed. In particular, requirements for inerting, sealing and pressure containment can probably be eliminated (as demonstrated by the revised safety analysis work outlined above). The following actions are proposed:

- 4.1. Develop a performance specification for the MHM which would be applicable if it

were determined that MCO rupture (during MCO transport, transfer, staging, or storage) is not a credible event. Evaluate and document the design changes that could be made to the current MHM design, based on this alternative performance specification. The evaluation should include capital and operating cost estimate savings.

- 4.2. Similarly, evaluate and document the design and/or operational changes that could be made to accommodate MCO relief system actuation within the MHM. This evaluation can include consideration of relief system capping prior to MCO pickup, as a way of precluding (rather than accommodating) relief system actuation.
- 4.3. Develop an alternate shielded transfer cask that could be utilized at the CSB in the event that the MHM is inoperable. This alternative concept should be based on the premise that MCO rupture is not a credible event. The shielded transfer cask should be very simple in design and conceptually similar to casks currently utilized for transfer of commercial SNF.

There is very large uncertainty regarding the true potential for cost reduction, in light of the advanced design and fabrication status. RL agrees that serious effort should be applied to developing a redesign that makes best use of existing, purchased MHM material or equipment.

## 5. Increase the schedule stagger between KW and KE operations

In simplest terms, this change would involve basing all design, procurement, construction, staffing and operational planning on the assumption that the SNF would be removed from the K-Basins in sequence (that is, one basin at a time) or with substantially less schedule overlap than is presently planned. This would reduce and simplify the work needed to start fuel removal and would permit sharper management focus on operations at each basin. Furthermore, and very importantly, the initial operations at one basin would provide a full scale, production line test of the all designs, equipment and procedures, in time to make necessary changes or refinements before installing equipment and commencing operations at the other basin.

The primary penalty of a sequencing change would be an extension of the projected overall time (and end date) for removal of all SNF from the K-Basins. However, the true impact here is not easily predicted, because the elimination of parallel work paths and the more manageable single-basin operations would reduce vulnerability to schedule upsets.

**FLUOR DANIEL**

Fluor Daniel Hanford, Inc.  
P.O. Box 1000  
Richland, WA 99352

September 10, 1997

FDH-9758158

Ms. E. D. Sellers, Director  
Spent Nuclear Fuels Project Division  
U.S. Department of Energy  
Richland Operations Office  
Richland, Washington 99352

Dear Ms. Sellers:

**CONTRACTOR REVIEW OF PROPOSED SPENT NUCLEAR FUEL PROJECT SCHEDULE**

Attached is the Committee Report for the joint contractor review of the proposed revised schedules for the Spent Nuclear Fuel (SNF) Project. The review, conducted between August 22, and September 2, 1997, focused on overall integrity of the proposed schedule.

In summary, the committee found no realistic means of reducing the proposed 14-month delay of the start of fuel removal from the Basins. However, the schedules appear to present an aggressive approach and no major flaws in planning assumptions or schedule logic were found which would reduce the probability of meeting the proposed fuel removal date. Several sub-project activities were identified where continuous management attention could yield significant improvement in near-critical path areas, reducing overall schedule risk. Several improvements to schedule logic were identified, for incorporation, which also should improve the probability of success.

While extensive changes to the overall project structure, technical strategy, or priorities were not within the scope of this review, many strategy revisions within the sub-projects were found to be incorporated into the proposed schedules. Noteworthy examples include early acquisition of process hardware for first article testing by the Cold Vacuum Drying (CVD) Facility sub-project, and rethinking of the role of enabling assumptions and characterization data in constraining safety analysis. It should be noted that the proposed schedule includes activities to investigate the elimination of the Hot Conditioning process based on results of a joint contractor/U.S. Department of Energy, Richland Operations Office review of overall technical strategy conducted in June as part of the Risk-Based Schedule Analysis process.

Schedule improvements described in the attachment are being incorporated into the proposed schedules. The risk analysis model, with the changes, will be run to determine changes in success probability and to finalize identification of key schedule drivers. Results will be documented in an ARES report.

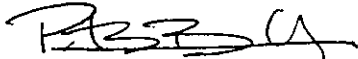


Ms. E. D. Sellers  
Page 2  
September 10, 1997

FDH-9758158

If you have any questions, please call me on 373-6307, or Mr. E. W. Gerber of my staff on 376-9356.

Very truly yours,

A handwritten signature in dark ink, appearing to read "N. H. Williams", with a stylized flourish at the end.

N. H. Williams, Project Director  
Spent Nuclear Fuel Project

ljc

Attachment

FDH-9758158

Attachment

Committee Report  
Spent Nuclear Fuel Project Schedule Review

Consists of 7 Pages  
Including Cover

## COMMITTEE REPORT

### SPENT NUCLEAR FUEL PROJECT SCHEDULE REVIEW

September 9, 1997

#### Objective

The Spent Nuclear Fuel (SNF) Project has proposed modified schedules which delay the start of fuel removal from the K Basins to July 30, 1999, a delay of 14 months from the current baseline. As part of the process to review and finalize modification of the baseline schedule a contractor committee was formed to review the schedules with the following three objectives:

1. Determine if the proposed schedule is viable and free of major logic or planning assumption errors which could impact the Project's ability to meet the revised fuel removal start date.
2. Review critical path or near-critical path sub-projects to identify potential changes in schedule logic or strategy which could reduce the 14-month delay without appreciable added risk.
3. Identify sub-project activities where additional management attention or alternate strategies could shorten schedule durations and increase the probability of success.

#### Process

The committee was formed on August 22, 1997 and conducted a series of schedule reviews and topical meetings through September 2, 1997. Committee members included:

George Babenko, MACTEC  
Eric Gerber FDH, (Chairman)  
Bruce Kirstein, FDI  
Csaba Molnar, FD - Fernald  
Bill Rasin, DESH  
Bob Wilkinson, DESH

Committee interviews with sub-project managers were conducted jointly with the U.S. Department of Energy, Richland Operations Office (RL) schedule review committee to minimize time impacts on Project staff. Sub-projects with activities on or within sixty days of the critical path were reviewed. These included:

Proximity to Critical  
Path (Float in Working Days)

Cold Vacuum Drying (CVD)	On Critical Path
Integrated Water Treatment (IWTs)	37
Fuel Retrieval System (FRS)	31
Startup/ORR	On Critical Path
Safety Analysis (Crosscut)(SAR)	10
Characterization	12
MCO/Cask Loading	18
Canister Storage Building (CSB)	38

All Level Three schedules were reviewed for each of these sub-projects with focus on critical activities. The Cold Vacuum Drying (CVD) Project Level Four schedule was also reviewed. In addition, topical meetings were held to further review two areas of concern which arose during schedule reviews: manual fuel handling to shorten the fuel retrieval schedule; and detailed discussion and agreement as to the extent of safety analysis required and the RL approval process necessary to satisfy installation of major modifications hardware in the K Basins. In all cases, the sub-project managers were well prepared and their cooperation and effort are appreciated.

Conclusions and Recommendations

1. Based on this review, the committee found the schedules to be viable and found no realistic way of shortening the fourteen month delay to start of fuel removal without substantially increasing programmatic risk. In several cases, individual sub-projects had improvements which shortened their own critical paths but had no impact on the overall SNF Project critical path. These sub-project scheduled improvements are noted in Item 6 below and should improve the overall probability of schedule success.
2. Several sub-project activities were identified where continuous management attention could yield significant improvement in that sub-projects critical path. For example, it was noted by the Integrated Water Treatment System (IWTs) Project Manager, Jim Loomis, that it was possible that additional work with their primary vendor could accelerate deliveries and/or enable parallel installation to a greater extent. Such improvements would further distance IWTs activities from the SNF Project critical path and support accelerated start of Fuel Retrieval System (FRS) Pre-Op testing with IWTs.
3. The committee did not find major disconnects in Project logic or planning assumptions which would jeopardize overall viability of the proposed schedule. A number of errors were found including unnecessary logic restraints and schedule date constraints, and small inconsistencies with Safety Analysis Report (SAR) planning assumptions. However, these have no apparent impact on overall Project start or end dates. Most of these errors were noted by scheduling staff during the meetings for later correction and only the most noteworthy are listed in item six below.

4. The committee found no characterization or enabling assumptions on the SNF Project critical path. Only one characterization task is near the critical path, initial whole element drying tests, which restrains finalization of CVD process design. Other characterization tasks shown near the critical path were found during the review to unnecessarily constrain other activities and can be removed from the list of activities within 60 days of the critical path.
5. During the period of the review the committee found instances of continued change to the schedule database. The schedule should be placed under configuration control even during its final revision prior to approval as the baseline.
6. Meetings were held on August 27 and 28 to discuss the possibility of using manual fuel handling, at least during initial operation, to accelerate the availability of the FRS. The committee concludes the following:
  - A. Manual fuel handling to sort fuel and load Multi-Canister Overpack (MCO) baskets is feasible and could be achieved relatively quickly to provide a backup to the remote manipulators.
  - B. Unless major modifications are made to the K Basins' operations deck (grate) and to the loading table and possibly fuel baskets, throughput would be less than that needed to support current schedules for operation.
  - C. If the manual system can be fabricated quickly, the best schedule acceleration accomplished by removal of the remote manipulators from the FRS critical path is two months with no improvement to the overall SNF Project fuel removal start date. At that point other FRS components become schedule-limiting. It should be noted that the FRS project manager has included in the proposed schedule nearly three months contingency for late delivery of the remote manipulators (because of the vendor's historical performance).
  - D. Operations staff believed that some remote operation capability is desirable as a backup, or for recovery from upset and unforeseen conditions. The FRS project manager has no plans to deliver such a system. It is recommended that further discussions occur between Operations and FRS project staff to decide whether or not the backup system is justified and plan accordingly.
7. A meeting was held on September 2, 1997, to determine specific requirements for safety analysis as a condition of installation of hardware in the K Basins. The general requirements are outlined in the "Spent Nuclear Fuel Schedule Key Drivers Resolution Committee" report dated August 15, 1997. This meeting addressed details from submittals to RL, and RL reviews and approvals, as applied to three major modifications: FRS; IWTs; and MCO/Cask Loading. Agreements reached between DE&S Hanford, Inc. (DESH), Fluor Daniel Hanford, Inc. (FDH), and RL follow and should be used to schedule the safety analysis submittals described:

- A. Safety analysis needed by DESH to assign safety class and quality requirements to procured equipment should suffice to support construction/installation. This analysis is to be augmented by Unreviewed Safety Questions (USQ) screenings for the installation activities themselves (heavy lifts, etc.).
  - B. DESH/FDH is to assemble that existing documentation and transmit it as the basis for installation for RL review. The analysis will then be incorporated into the next K Basin SAR update which will undergo for RL review and approval. If RL concludes during its review that the analysis is inadequate then appropriate actions, including possible work stoppage, will be determined by RL in conjunction with FDH and DESH.
  - C. Since Critical Decision 3 is already granted for MCO/Cask Loading, installation may proceed with the above actions occurring in parallel.
8. Listed below are specific recommendations resulting from the committee's review. The recommendations primarily identify sub-project activities that should be reviewed and modified now or receive continued management focus to improve schedules and probability of success:
- A. Further review of imposed schedule logic constraints (approximately 250), and open-ended activities shown in the schedules, is warranted. In several instances, unnecessary constraints near the critical path were identified to the sub-project manager during committee review meetings.
  - B. Schedules for IWTs, MCO/Cask Loading, and FRS do not yet consistently reflect generation of RL-approved safety documentation prior to installation in the K Basins. A series of three meetings are being scheduled by DESH and FDH with RL staff to arrive at a detailed agreement for each of these projects as to level of safety analysis required and specific RL approvals. The meetings should be completed during the week of September 2. Results of these meetings will need to be reflected in the schedules.
  - C. The committee suggests reviewing the logic for combining the CVD FSAR into the K Basin FSAR. Justification for the current strategy was not made clear during review of CVD on the SAR tasks and the added step of the extra SAR imposes an added critical path activity.
  - D. The CVD sub-project should continue to refine the first article testing and design verification activities to find opportunities for schedule improvement. Such improvement would directly reduce risk to achieving the July 1999 fuel removal start.
  - E. FRS has potentially restrained start of installation by full completion of its safety assessment document (SAD). Installation could be accelerated with an intermediate SAD.
  - F. FRS has included 60 working days for late manipulator delivery in its schedule to reduce risk. This added contingency duration places the

activity on the FRS critical path. This approach lowers risk, but appears inconsistent with schedule risk management elsewhere.

- G. For IWTS, two key activities warrant close management for potential schedule improvement. These are fabrication and delivery of process equipment and subsequent installation in the basin. These activities are shown in series with no overlap and have not been optimized.
- H. Within the CSB sub-project the installation of tube plugs and impact limiters have fallen onto its critical path due to funding constraints. This activity also conflicts with testing and startup activities scheduled to be conducted in the same part of the facility. Consideration should be given to reevaluating the funding constraint to allow some schedule flexibility and reduce the risk of impacting facility startup due to interference with training and testing activities.
- I. The current SNF Project schedules show no planned activity for safeguards and security requirement assessments which may be necessary for operation. The requirement for this assessment should be verified and the schedule augmented if necessary.
- J. Overall schedule logic for procedure development, training, startup testing, and readiness reviews is adequate. The greatest risk lies in the large number of parallel activities scheduled within a short period of time. Further work is needed over the coming months to refine the turnover process from construction to operations such that interferences can be identified early. It would also be prudent for the sub-projects to start procedure preparation as early as possible to reduce schedule risk.
- K. FSAR preparation for the CSB and the 100 K Area schedules a large number of parallel activities during a relatively short period. The committee found one instance where the FSAR (for the CSB) could begin earlier by eliminating an unrealistic schedule constraint, assuming resources are available earlier. Further detailed review of this area is warranted to attempt to move start of FSAR activities forward to reduce risk.
- L. The SAR preparation staff mentioned that certain design details constrained preparation of SAR phases and FSARs, yet there is no definitive list of these critical needs. A list of design needs outside of those included in enabling assumptions should be generated to support prioritization and management.
- M. Cask/MCO Loading schedule was greatly improved by an effort championed by Bill Gallo. It appears that by allowing parallel procurement and installation, approximately 10 weeks can be cut from this sub-project's schedule. Additional detailed procurement and equipment installation activities and logic should be added to the sub-project's schedule. Hold points for RL review of safety analysis documentation supporting installation needs to be added to the schedules since the 10 week savings may be reduced by these activities.

- N. The CSB's MCO Handling Machine hoist procurement schedule is being reviewed by the Project Manager for improvement. Success would shorten the schedule for CSB completion if impact limiter/tube plug installation is accelerated as discussed in Item H above. Start of the CSB FSAR is shown to be constrained by several enabling assumptions and the gas cart design. However, after discussion with CSB staff these constraints were found to be invalid and it may be possible to accelerate start of FSAR preparation.
9. A top-level review of the Sludge Removal Project was performed to evaluate feasibility of accelerating completion of removal, treatment, and disposal of the K Basins sludge. A one-year acceleration, with completion in September 2002, appears feasible without appreciably impacting probability of success and accelerates closure of the K Basins by a year as well. Further acceleration of the Sludge Removal Project will not further change Basins closure dates because water remediation and debris removal activities become constraining. The year acceleration would likely result in the following impacts:
- A. Sludge Removal costs would increase approximately \$10-15M because acceleration would require construction of a new facility to house the treatment process. Use of the CVD facility would not be feasible because processing of MCOs would interfere with necessary sludge equipment installation and testing activities.
- B. Cost of the Basins operations would be reduced \$20-25M due to accelerated closure.
- C. Additional Sludge Project funding would be required in FY 1998 through 2001 in the following approximate amounts:

<u>Fiscal Year</u>	<u>Additional Budget (\$M)</u>
1998	1 - 2
1999	2 - 3
2000	13 - 16
2001	1 - 4
2002	5 - 6 (savings)
2003	4 (savings)

Therefore, the net savings would be approximately \$10M, assuming a shift in the funding profile as discussed above.

## *Hanford Spent Nuclear Fuel Project*

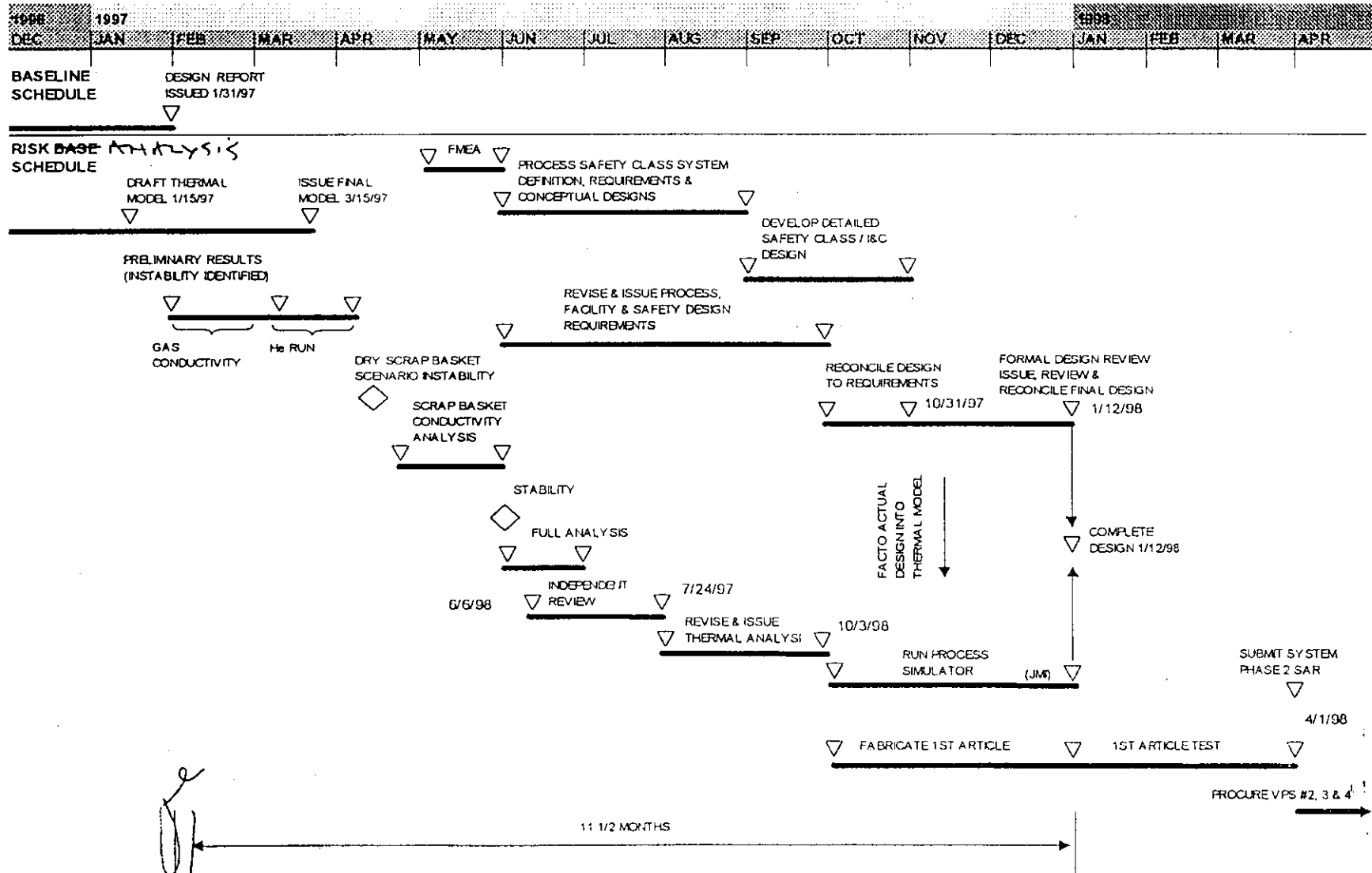
### ***Schedule Changes Major Impacts***

- **CVD Definitive Design** **+12 Months**
  - Rapid Reaction Rate Resolution*
  - Thermal Analysis/characterization data impacts*
  - FMEA: Safety Class System Upgrades*
- **CVD Pre-Operational Acceptance Testing** **+ 2 Months**
  - PAT includes all 4 bays*
  - Extended based on detailed evaluation of required testing*
- **Total CVD Impact to Critical Path** **14 Months**



# Hanford Spent Nuclear Fuel Project

## SPENT NUCLEAR FUEL PROJECT CVD SCHEDULE ANALYSIS



## ***Schedule Changes Major Impacts***

- **MHM Design** +4 1/2 Months
    - *Delay of vendors release due to criteria challenges (single failure proof hoist)*
  - **MHM Fabrication/Installation** + 4 1/2 Months
    - *Prefabrication & testing of turrent/hoist/grapple system*
    - *Lost place in hoist vendor que*
- 
- |                         |                       |
|-------------------------|-----------------------|
| <b>Total Subproject</b> | <hr/> <b>9 Months</b> |
|-------------------------|-----------------------|



## **Schedule Changes Major Impacts**

*(Continued)*

- **IWTS Design/Procure** **+4 Months**
  - *Criticality prevention*
  - *Safety Class equipment requirements*
  - *Submerged, safety class setting tanks*
  - *Filtration system selection*
  
- **IWTS Installation** **+5 Months**
  - *Build-to-print installation vs. skid*
  - *Safety Class equipment*
  
- Total Subproject** **9 Months**



## ***Schedule Changes Major Impacts*** ***(Continued)***

- **FRS Design/Procure** **+6 1/2 Months**
  - *Criticality analysis and modeling impacted design*
  - *Manipulator contract design/fabrication delays*
- **FRS In-Pool Demonstration**
  - *Revised estimate based on specific design* **+1 1/2 Months**

**Total Subproject**

---

**8 Months**



## ***Risk Based Schedule Modifications***

- Optimized and integrated closure of technical issues (enabling assumptions and characterization data)
- Incorporated new SAR template to decouple SAR preparation from critical path as much as possible
- Established a frame work for minimal risk procurement and installation on an accelerated basis
- Revised CVD procurement strategy to accelerate first of four units to test (1st article testing) in order to reduce start-up risk
- Added MHM preassembly strategy to reduce start-up risk
- Recognized need to upgrade technical baseline and make program improvements now to be ready for ORR



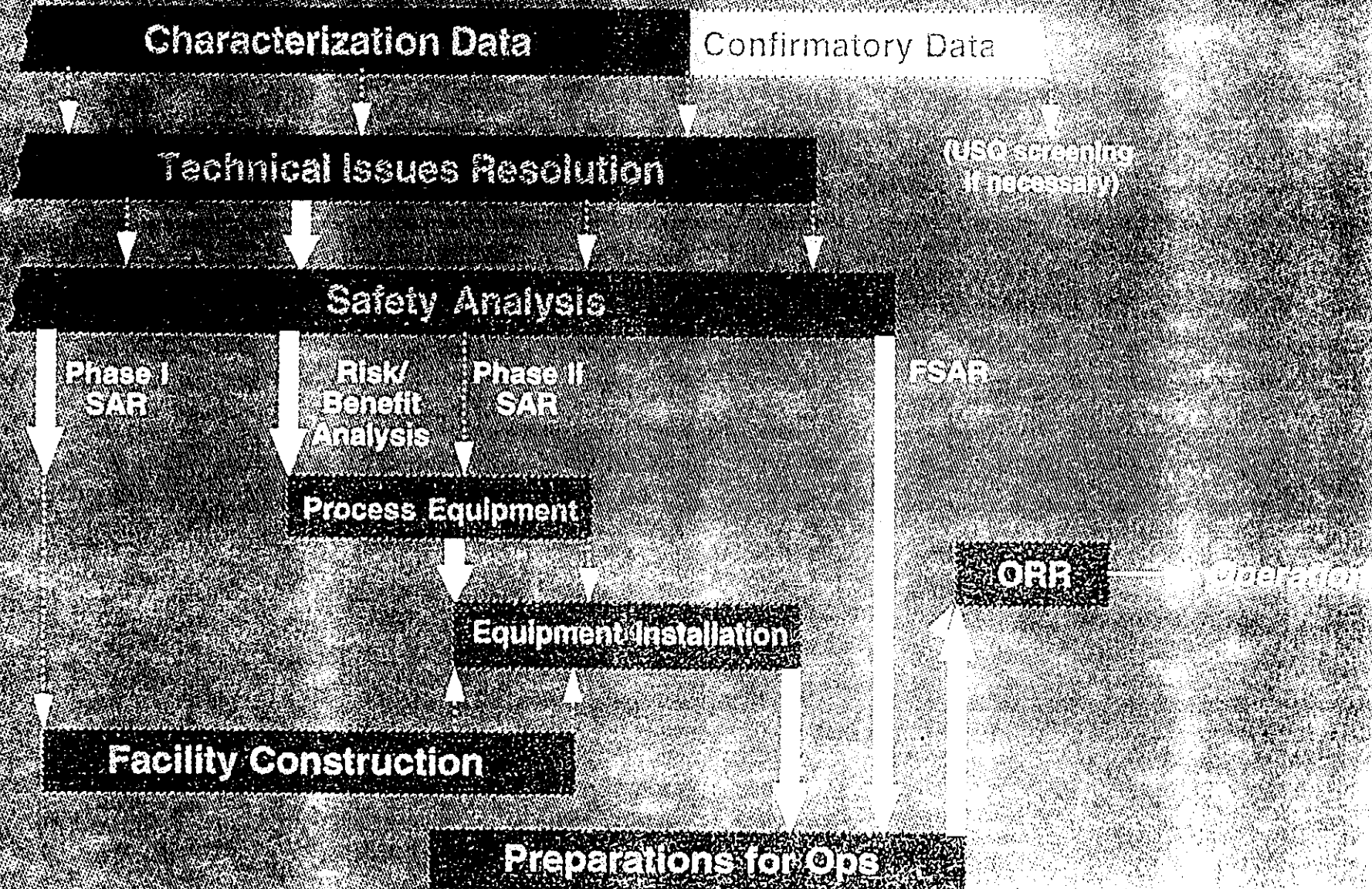
## ***Risk Based Schedule Modifications***

***(Continued)***

- Incorporated the impacts of technical issue resolution on subproject design and procurement activities
- Optimized ORR preparation schedule while providing appropriate durations for associated activities
- Added new scope (KQ rack and sludge removal, sludge pretreatment)
- Deferred HCS in FY98 and incorporated an activity to assess the need for the second conditioning step



# *Safety Analysis/Facility Construction Strategy*



## ***General Schedule Bases***

- Implementation of revised SAR strategy which takes advantage of preliminary level documentation and risk-0based decisions relative to procurement/installation (KDRC Agreements)
  - *CVD*
  - *IWTS*
  - *FRS*
  - *Cask Loadout*
- Two FSAR's - 100 Area and 200 Area
- Enabling Assumption closure will not change current technical approach (not on critical path)
- Sufficient resources will be available for key activities:
  - *SAR reviews (management pinch point)*
  - *Procedure preparation*
  - *Operators*
  - *HP Technicians*



## ***General Schedule Bases***

***(Continued)***

- Minor front end installations related to major subprojects in the K Basins will proceed in accordance with KDRC Agreements
- FRS mock-up activities remain as previously assumed; No additional mock-up activities added
- Operations activities consistent with existing WITNESS model
- MCO Overpack not included in current baseline and not included in proposed schedule
- Inerting included (under review)
- HCS activities put on hold for FY98. Evaluation of the need for this processing step to be conducted by January 1998. Possible elimination
- Construction integration for K Basin Projects will not cause a slip in the critical path (IWTS design just completed to allow for this assessment)

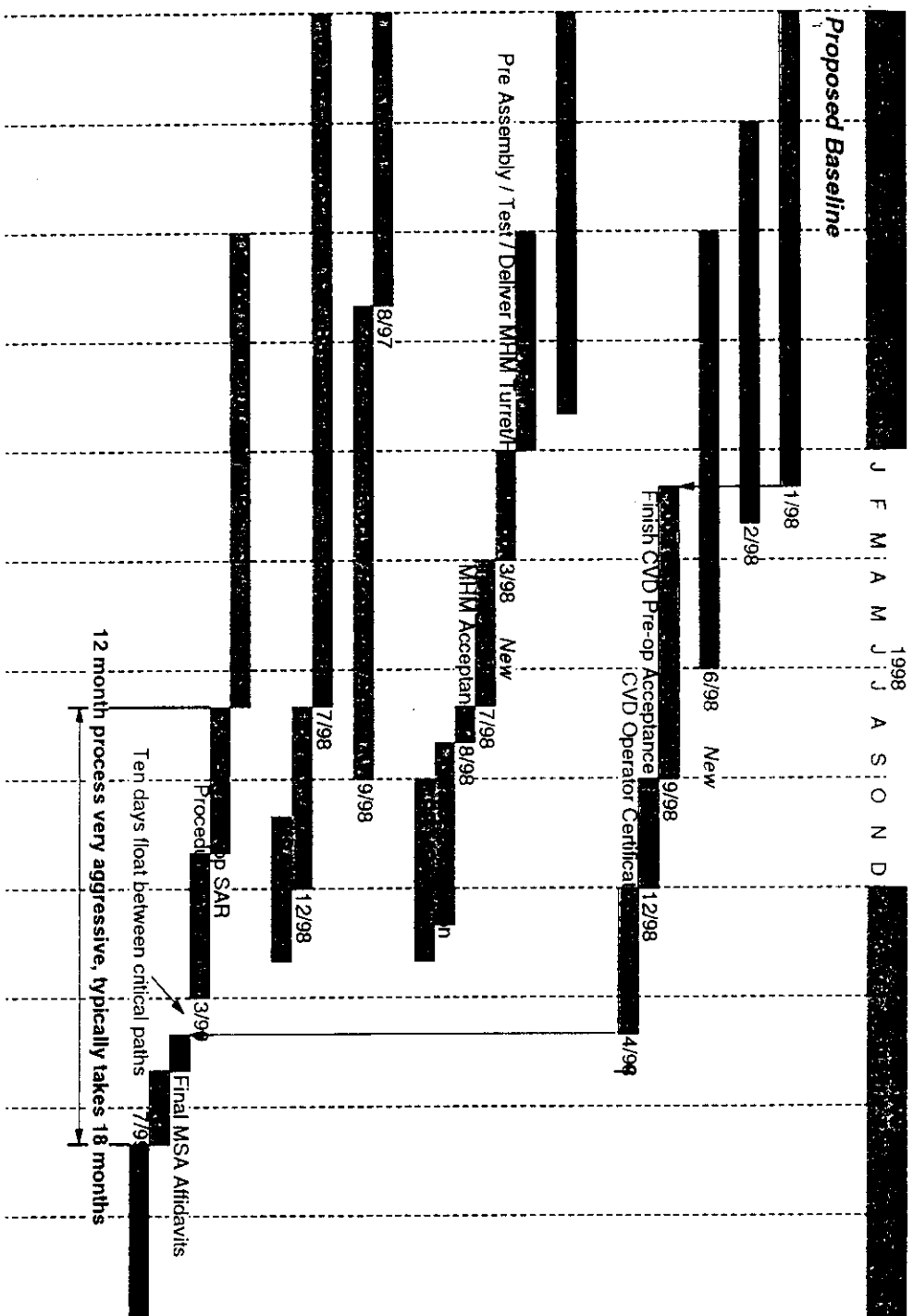


## ***General Schedule Bases***

***(Continued)***

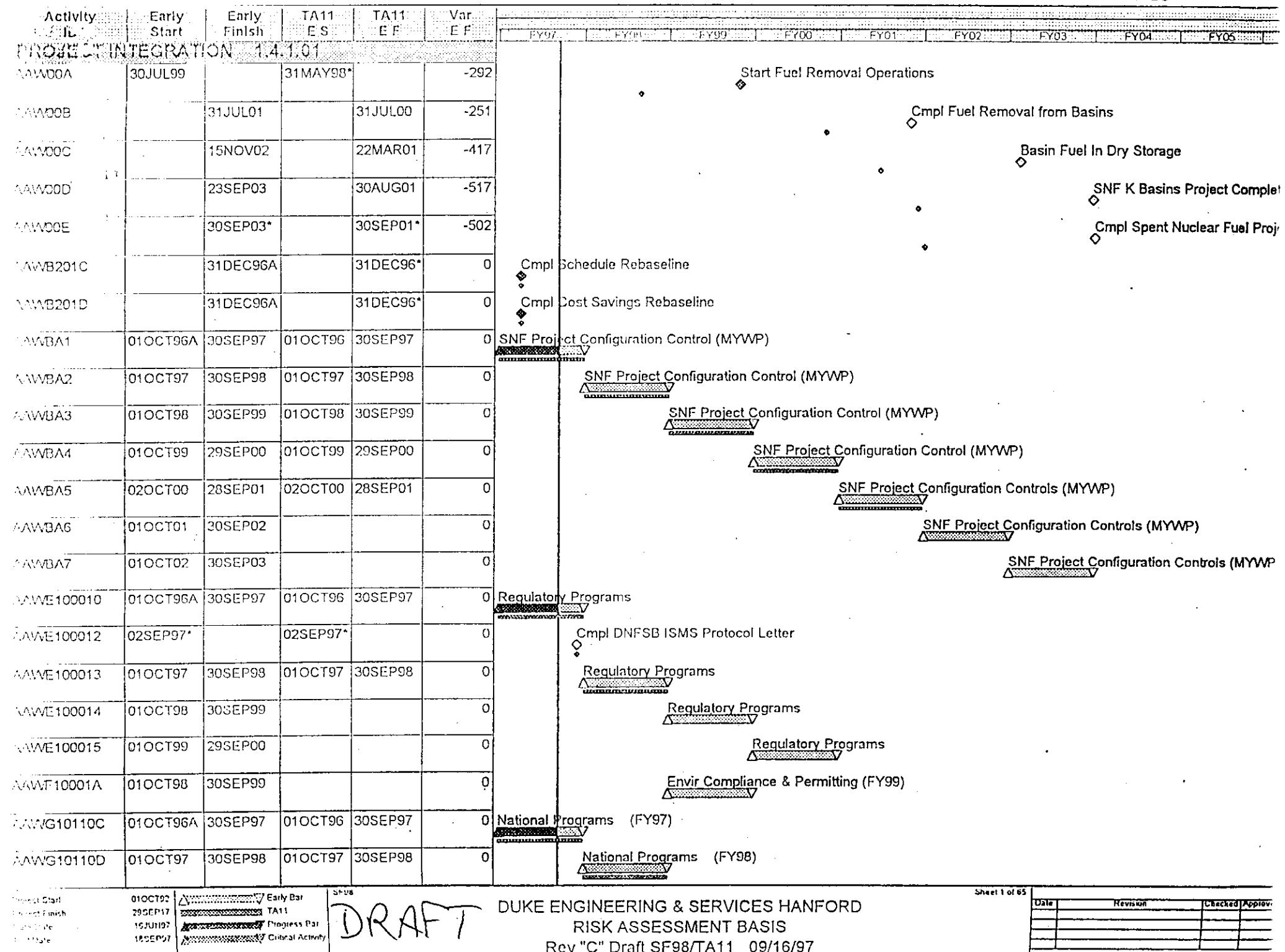
- Fuel movement begins in KW with KE starting movement 6 months later (under review)
- 6 months between basins is considered optimal by Operations personnel
- Sludge processing will take place in the CVD Facility (under review)
- Basin activities (sludge processing) will be conducted under CERCLA





*SNF Critical Path*

*9/23/97*



Activity IL	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
AWG10110E	01OCT98	30SEP99	01OCT98	30SEP99	0	
AWG10110F	01OCT99	29SEP00	01OCT99	29SEP00	0	
AWN10015		30DEC97*			0	
<b>Technical Assessment Support to SNFP</b>						
AWA2099	01OCT97*	30SEP98			0	
<b>SYSTEMS INTEGRATION 1.4.1.02</b>						
AWA03094	27MAY97A	23OCT97			0	
AWA03095	05SEP97	30OCT97			0	
AWA20200		13DEC96A		16DEC96*	1	
AWA20203	16DEC96A	15JAN97A	17DEC96	15JAN97	0	
AWA20206	16JAN97A	28FEB97A	16JAN97	28FEB97	0	
AWA20208		13DEC96A		15JAN97*	20	
AWA20210	16DEC96A	28FEB97A	16JAN97	28FEB97	0	
AWA20211	12MAY97A	10JUN97A	03MAR97	31MAR97	-50	
AWA20212	11JUN97A	24SEP97	01APR97	15JUL97	-50	
AWA202130		30SEP97*		30SEP97*	0	
AWA20214	25JUN97	10NOV97	15APR97	29AUG97	-50	
AWA202150		14NOV97*		14NOV97*	0	
AWB10300	01OCT96A	15NOV96A	01OCT96	15NOV96	0	
AWB10310	18NOV96A	10DEC96A	18NOV96	31DEC96	13	
AWB10320	03MAR97A	30JUN97	03MAR97	16MAY97	-30	
AWB105F	07MAY97A	25AUG97			0	
AWB201C	01OCT96A	30SEP97	01OCT96	30SEP97	0	
AWB302107	01OCT96A	30SEP97	01OCT96	30SEP97	0	
AWB302499		30SEP97		30SEP97	0	

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DAWR402	01OCT96A	30SEP97	01OCT96	30SEP97	0	Safeguards/Process Interface								
DAWR502	01OCT96A	30SEP97	01OCT96	30SEP97	0	FY97 Safety Basis Support								
DAWR50210A	07OCT97	24NOV97			0	Review SNF Thermal Safety Basis								
DAWR50215	25OCT96A	13DEC96A	25OCT96	13DEC96	0	SNFP Review of Technical Baseline								
DAWR50235	16DEC96A	30JUL97	16DEC96	30JUN97	-20	Validate Design & Safety Technical Baseline								
DAWR51012	01OCT96A	30SEP97	01OCT96	30SEP97	0	FY97 Engineering Planning & Management Support								
CHARACTERIZATION 1.4.1.02:01.04														
DBW4303B	01OCT96A	27NOV96A	01OCT96	27NOV96	0	Set-Up/Conduct KW Gas/Liq Lift, Look & UT								
DBW4303D-0	02DEC95A	31JAN97A	02DEC96	28FEB97	19	KW Liq Gas Lift/Look Analysis & UT Sludge Depth								
DBW4303D-1		31JAN97A		28FEB97	19	Complete KW Fuel Visual Observations								
DBW4303D-2	01OCT96A	07MAR97A	28OCT96	03MAR97	-4	KW G/L Lab Analysis for TRU & H2, 1st Data								
DBW4401A6	16OCT96A	14FEB97A	16OCT96	13FEB97	-1	KW Fuel Facility & Tooling, Sample, Prep & Ship								
DBW4401A7	31OCT96A	14FEB97A	31OCT96	12DEC96	-43	Prep For 2nd KW Canister Sludge Acquisition								
DBW4401B-1	20JAN97A	20FEB97A			0	Sample/Ship 6 KW Fuel Elements								
DBW4401B-2		20FEB97A			0	Complete Ship of 2nd KW (9) Fuel & (3) Can Sludge								
DBW4401B-3	03MAR97A	03MAR97A			0	Load & Ship 4th Cask (6 KW Fuel Elements)								
DBW4401C-1	09DEC96A	10JAN97A	18NOV96	07MAR97	39	Sample/Ship 6 KW Canister Sludge								
DBW4401D	10MAR97A	30JUN97	07APR97	16MAY97	-30	KW Fuel/Sludge Acq. Final								
DBW4510A-1	06NOV96A	07MAR97A	06NOV96	06FEB97	-20	327 Facility Prep for KW Fuel Receipt								
DBW4510A-2	05MAY97A	30JUN97	14FEB97	11APR97	-55	NDE KW Fuel Elements								
DBW4511A-1	14MAR97A	04SEP97	14APR97	16JUL97	-35	KW Fuel Plng, Surf/Sub- Surf Exam & DE Analysis								
DBW4511A-3	05SEP97*	02OCT97	17JUN97	16JUL97	-55	Prepare Final 2nd KW DE Report								
DBW4511A-4	10SEP97	18NOV97	17JUN97	16JUL97	-88	KW Coatings, TGA Drying & Report								
DBW4512B-1	26JAN98*	16JUN98	03SEP97	25NOV97	-138	KW Damaged Fuel (9-12) Furnace Test & Report								
DBW4512B-2	05MAY98	16JUN98	29OCT97	11MAR98	-68	KE Fuel Dry/Cond, 2 Scrap & Report								



Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
00W4702	17MAR97A	30SEP97	19MAY97	29SEP97	-1										Prep for KW Floor/Pit Sludge
00W47021	01OCT97	05JAN98			0										Prep for KW Floor/Pit Sludge
00W4703A	06JAN98*	19MAR98	01OCT97*	15DEC97	-64										KW Floor/Pit Sludge Sampling
00W4903B-0	03DEC96A	09JUL97	03DEC96	23APR97	-49										KE Sludge TGA MCO
00W4903B-1		05AUG97		05MAY97*	-63										Cmplt TGA Drying of 14 KE Can Sludge/Final Rpt
00W4903B-2	01OCT96A	07MAR97A	01OCT96	14MAR97	5										KE Can Sludge Analysis / Reporting
00W4903B-3	27MAY97A	05AUG97	17MAR97	17APR97	-75										KE Can Sludge Final Analysis & Report
00W4903B-4		05AUG97		17APR97	-75										Cmplt KE Can Sludge Final Analysis & Report
00W4905A-0	27MAY97A	04DEC97	08APR97	07AUG97	-82										TGA KW Internal Sludge MCO
00W4905A-1	20JAN97A	02SEP97	20JAN97	14AUG97	-12										KW Can Sludge Lab Analysis
00W4905A-2	16JUN97	14NOV97	08AUG97	19SEP97	-40										KW Can Sludge Lab Analysis - Critical Data
00W4905A1		02SEP97		19SEP97	13										M/S-O-Provide Canister Sludge
00W4905A2	18JUL97	15AUG97			0										KW Can Sludge Model Data
00W4905AB	01OCT97	17NOV97			0										KW Can Sludge Brown cover Report
00W4905C	05DEC97	11FEB98	20FEB98	02APR98	35										Surface/SubSurface Deposits - Lab Exams
00W4920	20MAR98	30SEP98	16DEC97	30JUN98	-63										KW Floor Pit Sludge Lab - Physical Exams
00W4922	01JUL98	30SEP98	01JUL98	30SEP98	0										KW Floor/Pit Sludge Lab Analysis - TWRS
00W4923	01OCT97*	30SEP98			0										KE/KW Canister Sludge for Pre Treatment
00W4930B	06JAN98	30SEP98	01OCT97	30SEP98	0										Disposition Wastes & SNF - FY98
00W4930B1	01OCT98	30SEP99			0										Disposition Wastes & SNF - FY99
00W4930C	02MAR99	30SEP99	02MAR98	30SEP98	-251										327 Hot Cell Equipment Clean-up and Restoration
TECHNOLOGY ACQUISITION 1.4.1.02.01.03															
00WD143	01OCT96A	24OCT96A	01OCT96	24OCT96	0										Integrated Test Strategy
00WD143A05		24OCT96A		24OCT96	0										Cmplt Integrated Tstg Strategy for SNFP
00WD17903	03MAR97A	13JUN97A	03MAR97	30MAY97	-10										Resolve Tech Baseline Issues



Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AW01A24	18MAY99	03JUN99	01APR98	24APR98	-231				Perform Indep. Contr. Fuel Relocation ORR					
AW01A24A		08JUN99		24APR98	-281				Compl SNFP Contractor Operational Readiness Rev					
AW01A25	09JUN99	15JUN99	22APR98	30APR98	-282				Prepare DOE ORR Readiness Letter					
AW01A25A		15JUN99		30APR98	-282				Start/Submit DOE ORR Readiness Letter					
AW01A26	16JUN99	15JUL99	01MAY98	29MAY98	-282				Perform DOE Fuel Relocation ORR					
AW01A27		15JUL99		29MAY98	-282				Compl SNFP DOE Operational Readiness Rev					
AW01A27D	16JUL99	29JUL99			0				K West Fuel Movement Authorization					
AW01A28	30JUL99		30MAY98		-292				CD4 - FMO KW (CSB/CVD/FRS KW/MCO/Crane Mods)					
AW01A28D	30JUL99		30MAY98		-292				Compl Authorization Agreement Signing					
AW02A02A	15APR97A	06MAY97A			0				Prepare K-Basins SAR Rev3A/TSR Rev 0A					
AW02A02B		06MAY97A			0				Submit K-Basin SAR Rev 3A/TSR Rev 0A					
AW02A02C	07MAY97A	14JUL97			0				DOE Review/Comment K-Basins SAR Rev3A/TSR Rev 0A					
AW02A02D		14JUL97			0				DOE Approve Basin SAR Rev 3A/TSR Rev 0A					
AW02A03A	08AUG97	05SEP97*			0				Prepare K-Basins SAR Rev3B/TSR Rev 0B					
AW02A03B		05SEP97*			0				Submit K-Basin SAR Rev 3B/TSR Rev 0B					
AW02A03C	08SEP97	21OCT97			0				DOE Review/Comment K-Basins SAR Rev3B/TSR Rev 0B					
AW02A03D		21OCT97			0				DOE Approve Basin SAR Rev 3B/TSR Rev 0B					
AW02A04A	01OCT97	06JAN98			0				Upgrade Basin SAR Rev 4 Chptrs 2-6					
AW02A04D	28JAN98	25FEB98			0				Finalize KBasin SAR Rev 4 Upgrades					
AW02A04F	15DEC97	14JAN98			0				Finalize Basin SAR Chptrs 7-17					
AW02A06A	26MAR98	20MAY98			0				Final Compile SAR					
AW02A06D	26FEB98	25MAR98			0				Finalize Basin TSR's, Rev 1					
AW02A08D		27JAN98			0				Receive Last FRS, Loading Basin SAR Data					
AW02A08E		25MAR98			0				Receive CVD 100K SAR Data					

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AW02A08F		29SEP97			0									
AW02A08H		30SEP97			0									
AW02A10	17DEC96A	30SEP97	21JAN97*	30APR97	-105	Prepare K-Basin SAR Rev 4 / TSR Rev 1								
AW02A12	21MAY98	03AUG98	01MAY97	27MAY97	-297	100K Area SAR Internal Review								
AW02A14	04AUG98	03NOV98	28MAY97	27AUG97	-298	100K Area SAR RL Review								
AW02A16		03NOV98		27AUG97	-298	Approve 100K Area SAR								
AW02A30	04AUG98*	04MAR99	06JAN98*	03AUG98	-146	Prepare 100K SAR - Sludge/KE IWTS								
AW02A32	05MAR99*	30APR99	04AUG98*	30SEP98	-146	DESH/FDH Review 100K SAR - Sludge/KE IWTS								
AW02A34	03MAY99	18AUG99	01OCT98	20JAN99	-146	DOE Review/Comment/ 100K SAR - Sludge/KE IWTS								
AW02A36		18AUG99		20JAN99	-146	DOE Approve 100K SAR Sludge/KE IWTS								
AW02A38	19AUG99	01OCT99	21JAN99	05MAR99	-146	Implement/Train 100K SAR Sludge/KE IWTS								
AW02A41A	19AUG99	20MAR00			0	Prepare 100K SAR - FY1999 Update								
AW02A41C	21MAR00	16MAY00			0	DESH/FDH Review 100K SAR - FY1999 Update								
AW02A41E	17MAY00	01SEP00			0	DOE Review/Comment/ 100K SAR - FY1999 Update								
AW02A41G		01SEP00			0	DOE Approve 100K SAR - FY1999 Update								
AW02A41J	05SEP00	17OCT00			0	Implement/Train 100K SAR FY1999 Update								
AW02A50	03SEP96A	31OCT96A	03SEP96	31OCT96	0	Provide Draft KW NOC Air Permit Data								
AW02A52	20DEC96A	02APR97A	20DEC96*	07FEB97	-37	DESH Prep/Rvw KW Basin DOH/EPA Air Permit NOC								
AW02A53	03APR97A	11APR97A			0	FDH Rvw KW Basin DOH/EPA Air Permit NOC								
AW02A53A	14APR97A	01MAY97A			0	DESH Rslv FDH Commts KW DOH/EPA Air Permit NOC								
AW02A54	01MAY97A	20JUN97	21FEB97	19MAR97	-66	DOE Review KW Basin DOH/EPA Air Permit NOC								
AW02A54A	23JUN97	08JUL97			0	DESH Rslv DOE Commts KW DOH/EPA Air Permit NOC								
AW02A54B	09JUL97	11JUL97			0	DESH Xmit to DOE Rvsd DOH/EPA Air Permit NOC								
AW02A54C	14JUL97	18JUL97			0	DOE Apprv/Xmit DOH/EPA Air Permit NOC to DOH/EPA								

[illegible]

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
AW02B015K		27FEB97A		28FEB97	1	Ops Chiefs Available (8)
AW02B015L		21JUL98		23DEC97	-143	Trained Operators on Staff (58)
AW02B015M	01SEP98*	21OCT98	02MAR98	20APR98	-128	New Ops Train Core/Basin M&O, S3 (10)
AW02B015N		21OCT98		20APR98	-128	Trained Operators on Staff (68)
AW02B015P	01DEC98*	20JAN99	21APR98	08JUN98	-154	New Ops Train Core/Basin M&O, S4 (20)
AW02B015Q		20JAN99		03DEC98	-31	Trained Operators on Staff (88)
AW02B015R	01MAR99*	16APR99	04DEC98*	26JAN99	-57	New Ops Train Core/Prereq, S5 (20)
AW02B015S		16APR99		26JAN99	-57	Trained Operators on Staff (102)
AW02B015T	02AUG99*	20SEP99			0	New Ops Train Core/Prereq, S6 (13)
AW02B015U		20SEP99			0	Trained Operators on Staff (121)
AW02B018	03MAR97A	30SEP97	03MAR97	30SEP97	0	New Operator Training & SU Support
AW02B018C	01APR98*	30SEP98	01OCT97	05DEC97	-205	Train Management/Tech Staff
AW02B019	01JUL97*	30SEP97	01JUL97*	30SEP97	0	Design & Implement Shift Mgmt Training
AW02B0191	01SEP98*			01OCT97*	-229	Hire HPTs (23)
AW02B0192	01SEP98	01MAR99	02OCT97	31MAR98	-229	HPT Training, S1
AW02B0193	02MAR99	28APR99	01APR98	29MAY98	-229	HPT On The Job Training, S1
AW02B0194	03MAY99*			31MAR98	-273	Hire HPTs (20)
AW02B0195	03MAY99	01NOV99	01APR98	30SEP98	-273	HPT Training, S2
AW02B0196	02NOV99	07JAN00	01OCT98	03DEC98	-273	HPT On The Job Training, S2
AW02B0197	04JUN97A	11JUL97	04JUN97*	02JUL97	-5	HP Work Procedures/Routines
AW02B0198	01JUL98*	31AUG98			0	HP Work Procedures/Routines
AW02B019A	01JUL98*	30SEP98			0	Update Shift Mgmt Training
AW02B021	01OCT96A	30SEP97	01OCT96*	30SEP97	0	Perf Startup Management
AW02B023		03MAR97A		03MAR97	0	Compl Initial Startup Test Review Board

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
AW02B022A	17MAR97A	30SEP97	04MAR97	30SEP97	0	Perf Test Review Board Procedures Approvals
AW02B025	02JAN97A	31JUL97	02JAN97*	31JUL97	0	Prep Startup Administrative Procedures
AW02B03	01OCT96A	20FEB97A	01OCT96	20FEB97	0	Perf FRO Ops Readiness Mgmt Scope 1
AW02B03A	21FEB97A	30SEP97	21FEB97	29SEP97	-1	Perf FRO Ops Readiness Mgmt Scope 2
AW02B03G	01OCT97*	30SEP98			0	Staffing Ramp Up for Operations Start
AW02E08	01DEC98*	29JUL99	01OCT97	29MAY98	-292	Perf Common Process Pre Ops Scope - FY98
AW04A50	30JUL99*	01MAY00	01JUN98*	04MAR99	-292	Perf Common Process Opns Scope - FY98
AW04A52	02MAY00	09AUG01	05MAR99	28JUL00	-259	Perf Common Process Opns Scope - FY99/00
AW04A54	10AUG01	12SEP02	31JUL00	30AUG01	-259	Perf Cleanout Common Process Ops - FY00/01
AW05A05	03APR00*				0	Start Tritium Level Reductions in K-East Basin
AW05A10	03APR00	28SEP01			0	Perform KE Basin Tritium Reduction Operations
AW05A15		28SEP01			0	Cmpl Reducing Tritium Concentration in KE Basin
AW710101E		20MAR97A		30MAY97	50	Cmpl & Issue Conduct of Operation Matrix Update
AW710103M		01AUG97			0	SNF Project Publish Revised Alara Manual
AW710103N		30SEP97			0	DESH & FDH Publish Revised Alara Manual
AW710204B	01APR97A	30SEP97	01APR97	30SEP97	0	Continue K Basins Facility Maintenance
AW710302C		03AUG98		27MAY97	-297	SAR K Basin Submittal
AW710302D	27NOV96A	27NOV96A	01OCT96	30JAN97	41	Submit K Basins Standards & Reqr. ID Doc Update
AW710401B	02JAN97A	31MAR97A	02JAN97	31MAR97	0	2nd QTR K Basins Training & Support Functions
AW710401C	01APR97A	30JUN97	01APR97	30JUN97	0	3rd QTR K Basins Training & Support Functions
AW710401D	01JUL97	30SEP97	01JUL97	30SEP97	0	4th QTR K Basins Training & Support Functions
AW710401E		13DEC96A		13DEC96	0	Cmpl & Issue K Basins TIM Update
AW310101	01OCT97	30SEP98	01OCT97	30SEP98	0	K Basin Operations - FY98
AW310501M		03NOV97			0	Start FEB Audit - FY98

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W10101	01OCT98	30SEP99	01OCT98	30SEP99	0			K Basin Operations - FY99						
W10201	01OCT99	29SEP00	01OCT99	29SEP00	0			K Basin Operations - FY00						
W10301	02OCT00	28SEP01	02OCT00	28SEP01	0				K Basin Operations - FY01					
W10401	01OCT01	30SEP02			0					K Basin Operations - FY02				
W10501	01OCT02	05SEP03			0						K Basin Operations - FY03			
ESSENTIAL SYSTEMS 1.4.1.04.01.01														
R1302	01OCT96A	30SEP97	01OCT96	30SEP97	0	Construction (FY-97)								
R13022	01OCT97	30SEP98	01OCT97	30SEP98	0	Construction (FY-98)								
R1302290		01DEC97		31OCT97*	-19	CD 2/3 PWS Def Design & Procurement/Construction								
R1302992		30SEP98		30SEP98	0	CD4 PWS Operations								
R1302995		31MAR97A		31MAR97	0	Compl K-Basins Essential Systems (Elec Upgr & MF)								
COLD TEST FACILITY 1.4.1.04.01.05														
W1102	01OCT96A	30SEP97	01OCT96	30SEP97	0	Maintain Cold Test Facility for Sub-projects								
W1103	01OCT97	30SEP98	01OCT97	30SEP98	0	Maintain Cold Test Facility for Sub-projects								
W11031	01OCT98	29SEP00	01OCT98	29SEP00	0	Maintain Cold Test Facility for Sub-projects								
BASIN PERSONNEL FAC UPGRADES 1.4.1.04.01.07														
R1103	01OCT96A	31JUL97	01OCT96	31JUL97	0	* Design, EI Inspections								
R1103999		31OCT96A		30OCT96	-1	MS [DESH] Personnel Fac UG Def Design								
R11051	01NOV96A	17JAN97A	31OCT96	31DEC96	-12	Pre Construction Prep								
R11052	02DEC96A	31JUL97	02JAN97	31JUL97	0	Construction								
R1105200	02DEC96A		02JAN97		20	MS [DESH] Start Basin Personnel Fac Construction								
R1105299		31JUL97		31JUL97	0	MS (DESH) Basin Personnel Fac Complete								
DOSE REDUCTION 1.4.1.04.02														
W14041	01OCT96A	15OCT96A	01OCT96	26NOV96	30	* Procure Superstructure Decontamination								
W14042	01OCT96A	31OCT96A	27NOV96	31JAN97	61	Install Superstructure Decontamination								
W14061	01OCT96A	02MAY97A	02DEC96*	30MAY97	19	K-Basin Floor Re-Finish at Kwest								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
BWV1406198		02MAY97A		30MAY97	19	MS [DESH] Decon/Seal Work Area Floor in KW Cmpit
BWV14062	01MAY98*	19SEP98	01OCT97*	02FEB98	-159	K-Basin Work Area Floor Re-Finish at Keast
BWV1406299		19SEP98		02FEB98	-159	MS [DESH] Decon/Seal Work Area Floor in KE Cmpit
BWV1407	01OCT96A	20MAR97A	02DEC96*	31MAR97	7	K-Basin Public Address Comm System
BWV1501	01OCT96A	14MAY97A	01OCT96	31JUL97	53	Hydrolase Systems
BWV1501999		14MAY97A		31JUL97	53	MS [DESH] Hydrolase Piping in KE Basin Cmpit
BWV1502	01OCT96A	30SEP97	02DEC96*	30SEP97	0	Decontaminate Unused Systems
BWV15021	01DEC97*	01APR98	01OCT97	02FEB98	-41	Decontaminate Unused Systems
FUEL RETRIEVAL SUB-PROJECT 1.4.1.04.03						
CW01A10	01OCT96A	30SEP97	01OCT96*	30SEP97	0	Facilitate FR SU/Construction
CW01A10A	03MAR97A	30MAY97A	03MAR97	30MAY97	0	Prepare FR Preop Test Specifications
CW01A10B	02JUN97A	29AUG97	02JUN97	29AUG97	0	Prepare FR Preop Test Procedures
CW01A10C	01JUL97*	30SEP97	01JUL97*	30SEP97	0	Prepare FR Preop Testing - FY97
CW01A10D	01OCT97*	01JUL98	01OCT97	21NOV97	-151	Prepare FR Preop Testing - FY98
CW01A23D	17JUL98	22JUL98	01DEC97	04DEC97	-157	Perf KW Fuel Remvl Pre Op/Op Test (W/O IWTS)
CW01A23D1	23JUL98	07AUG98			0	Perf Basin FR Pre Op Fac/Eqpt Repair
CW01A23E	28SEP98	01OCT98	16DEC97	17DEC97	-198	Conduct KW FRS Pre-Op Test (With IWTS)
CW01A29D	16DEC96A	02SEP97	16DEC96*	04APR97	-103	Basin Fuel Removal Training Analysis
CW01A29E	03SEP97	26SEP97	07APR97	30APR97	-103	Basin Fuel Removal Training Design
CW01A29F	29SEP97	12NOV97	01MAY97	17JUN97	-103	Basin Fuel Removal Training Development
CW01A29G	04AUG98	06OCT98	01OCT97*	28JAN98	-174	Basin Fuel Removal Update Training
CW01A29G1	14OCT98	10NOV98			0	KW Fuel Removal Operators Classroom Training
CW01A29G5	11NOV98	10DEC98			0	Perform Basin FR Operators OJT
CW01A29J		16MAR99		29JAN98	-282	FRS Ops Chiefs Certified (2)
CW01A29L	04DEC98	16MAR99	30JAN98	27FEB98	-262	Basin FR Operators JPM

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W01A29M		16MAR99		27FEB98	-262				Basin FR Other Operators Certified (11)						
W01A29N	22MAR98	02APR99			0				FR MSA Confirmation of SAR Implementation						
W01A29P	04JUN98	03DEC98			0				Staff/Train Basin FR Mgmt/Tech Staff						
W01A30	04NOV98	20FEB99			0				FR Basin SAR Impl-Test Certs, Config Mgmt, etc						
W01A30A	05FEB99	19MAR99			0				FR Operator Training Update for FSER						
W01A30D	03MAR97A	09MAY97A	21APR97*	16MAY97	5		Draft Basin Fuel Removal Procedures - Rev A								
W01A30DD		03AUG98			0				Receive FR Procedures SAR Review Data						
W01A30DG		31DEC97			0				Receive FR Procedures Last Vendor Data						
W01A30GD	04NOV98	17DEC98			0				Review Basin FR Final SAR Changes						
W01A30GF	25NOV98	19FEB99			0				FR Rev 1 Procedures Update for FSER						
W01A30J	04AUG98	27OCT98	16JAN98	29JAN98	-188				Basin Fuel Removal Procedures Rev 0						
W01A30K		27OCT98		29JAN98	-188				Basin FR Procedures Under Change Control						
W01A35D	04DEC98	16MAR99	16JAN98	27FEB98	-262				Perform KW Basin FR Integrated Ops Test						
W01A38	10NOV98	02APR99	07OCT97	27FEB98	-275				Prepare KW Fuel Removal MSA Affidavits						
W01AG3	05AUG98	03DEC98			0				Staff/Train Basin FR BU Staff						
W01B02	01OCT96A	30SEP97	01OCT96*	30SEP97	0		Perform KW Fuel Remvl Staff/Train/Readiness Prep								
W01B09	30JUL99		30MAY98		-292				Start KW Fuel Removal Operations						
W01B10	30JUL99	28JAN00	01JUN98	25NOV98	-292				Operate KW Basin Fuel Removal (One MCO/Week)						
W01B12	31JAN00	29MAY01	30NOV98	30MAR00	-292				Operate KW Basin Fuel Removal (One MCO/Two Days)						
W01C02	15DEC99	14JAN00	31DEC98	28JAN99	-241				Perf KE Basin Fuel Removal Pre Op/Op's Readiness						
W01C02B	04JAN99	29JAN99			0				Perf KE Fuel Remvl Pre OP/OP Test (W/O IWTS)						
W01C02C	01OCT99*	06OCT99			0				Conduct KE FRS Pre-Op Test (With IWTS)						
W01C02D	17JAN00			28JAN99	-241				CD4A Fuel Move Operations (KE)(M34-16)						
W01C02G	07OCT00	05JAN00			0				Perform KE Basin FR Integrated Ops Test						

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
CWA01C03	17MAY99*	14JAN00	01JUN98*	28JAN99	-241										Prep KE Basin Fuel Removal Ops/Maint/Admin Procd
CWA01C04	11NOV99*	09DEC99	05OCT98*	29OCT98	-278										Perform KE Basin Fuel Removal Facility/OJ Trng
CWA01C05	13OCT99*	10NOV99	03SEP98*	02OCT98	-278										Validate/Test KE Basin Fuel Removal Procedures
CWA01C22	14MAY99	14JAN00	01JUN98*	29JAN99	-240										Perf KE Basin Fuel Remvl Pre-Operation Scope
CWA01C22B	04JAN99	31MAR99			0										Perf KE Basin Pre OP Testing Punchlist
CWA01C23	17JAN00		01FEB99		-240										Start KE Basin Fuel Removal Operations
CWA01C24	31JAN00	29MAR00	01FEB99*	31MAR99	-250										Operate KE Basin Fuel Removal (One MCO/Week)
CWA01C26	30MAR00	30JUL01	01APR99	31JUL00	-250										Operate KE Basin Fuel Removal (One MCO/Two Days)
CWA01C28		30JUL01		31JUL00	-250										Complete Basin Fuel Removal Operations
CWA3010	30APR96A	15NOV96A	30APR96	01NOV96	-10										FRS - Prepare FRS Equipment/System Design
CWA3012		15NOV96A		01NOV96	-10										FRS - Complete FRS Equipment/System Design
CWA3025	01OCT96A	30SEP97	01OCT96*	24SEP98	247										FRS - Title III - Design Integration FY97
CWA3025A	01OCT96A	02JAN98			0										FRS - Title III Dsn Integ Suppt to Procure FY97
CWA3025A1	16JUN97	10SEP97			0										FRS - MK1A Scrap Basket Overpack
CWA3025X	01OCT97	30SEP98			0										FRS - Title III - Design Integration FY98
CWA3025Y	05JAN98	02APR98			0										FRS - Title III Dsn Integ Suppt to Procure FY98
CWA3025Z	01OCT98	31MAR99			0										FRS - Title III - Design Integration FY99
CWA3030	01OCT96A	14MAR97A	01OCT96	10MAR97	-4										FRS - Prepare KW 90% Facility Mods Design
CWA3030A		14MAR97A		10MAR97	-4										FRS - Cmpt KW 90% Facility Mods Design
CWA3030M	17MAR97A	14MAY97A			0										Rslv Dsn Act'n Items Req'd-KW 100% Fac Mods Dsn
CWA3030P	15MAY97A				0										Deliver FRS KW 100% Fac Mods Dsn LOI to FDNW
CWA3031	16MAY97A	12SEP97	01APR97*	25APR97	-96										FRS - Prepare KW 100% Facility Mods Design
CWA3032		12SEP97		25APR97	-96										Cmpl KW FRS Facility Mods Design
CWA3040	04NOV96A	14MAR97A	04NOV96*	20JAN97	-38										FRS - Prepare KE 90% Facility Mods Design

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
CWA3040A		14MAR97A		20JAN97	-38	FRS - Cmpmt KE 90% Facility Mods Design								
CWA3040M		07JUL97*			0	Deliver FRS KE 100% Fac Mods Dsn LOI to FDNW								
CWA3041	08JUL97	26SEP97	01AUG97	26SEP97	0	FRS - Prepare KE 100% Facility Mods Design								
CWA3042		26SEP97		26SEP97	0	Cmpl KE FRS Facility Mods Design								
CWA4020	15JUL96A	30SEP97	15JUL96A	19AUG97	-29	FRS - Procure Manipulators - FY97								
CWA4020A	01OCT97*	03NOV97			0	FRS - Procure Manipulators - FY98								
CWA4021		30SEP97			0	FRS - Manips Vendor Design Final								
CWA4021A	01OCT97	28OCT97			0	FRS - Manips Vendor Design R&A								
CWA4022		03NOV97*		19MAY97*	-116	FRS - Deliver KW Manips to Hanford (Sys 1)								
CWA4024		01DEC97*		19AUG97	-71	FRS - Dlvr KE Manips to Hanford (Sys 2 & 3)								
CWA4042	07OCT96A	13DEC96A	07OCT96*	13DEC96	0	FRS - Prep Construction Mgmt Plan								
CWA4100	23JAN97A	30SEP97	03FEB97*	01DEC97	42	FRS - Procure KW/KE Flex Transfer Crane FY97								
CWA4100A	01OCT97	01DEC97			0	FRS - Procure KW/KE Flex Transfer Crane FY98								
CWA4103		01AUG97*			0	FRS - Flex Transfer Crane Vendor Design Final								
CWA4104	04AUG97	15AUG97			0	FRS - Flex Transfer Crane Vendor Design R&A								
CWA4105		15SEP97*		22AUG97*	-15	FRS - Deliver KW Flex Transfer Crane to Hanford								
CWA4110		01DEC97		01DEC97	0	FRS - Deliver KE Flex Transfer Crane to Hanford								
CWA4112	01OCT97*	31DEC97			0	FRS - Procurement of KW/KE Trolleys/Hoists								
CWA4114		31DEC97			0	FRS - Deliver KW/KE Trolleys/Hoists to Hanford								
CWA4120	29JAN97A	30SEP97	29JAN97*	01APR98	125	FRS - Procure KW/KE Inpool Process Equip FY97								
CWA4120A	01OCT97	26NOV97			0	FRS - Procure KW/KE Inpool Process Equip FY98								
CWA4120X	01OCT97*	30SEP98			0	FRS - Procure KW/KE Spare Parts FY98								
CWA4125	02DEC96A		22NOV96*		-4	FRS - Issue RFP for Inpool Process Equip								
CWA4130		29JAN97A		31JAN97*	2	FRS - Award KW/KE Inpool Process Equip Contract								

[illegible]

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
CWA4184A	10MAR98	30MAR98			0			FRS - KW Decapper Equip Install						
CWA4184B	03APR98	23APR98			0			FRS - KW Stuck Fuel Equip Install						
CWA4185A	13OCT97	21NOV97	28APR97	31DEC97	24			FRS - KE Construction Planning for Demolition						
CWA4185B	24NOV97		02JAN98*		24			FRS - KE Start Demolition						
CWA4185C	24NOV97	23FEB98	02JAN98	27MAR98	24			FRS - KE Demolition						
CWA4185D		23FEB98		27MAR98	24			FRS - KE Complete Demolition						
CWA4185H	09DEC97	09JAN98	15JAN98	12FEB98	24			FRS - KE Construction Planning for Facility Mods						
CWA4186	12JAN98	16JUN98	13FEB98	01JUN98	-11			FRS - KE Facility Modifications						
CWA4188	17JUL98	30SEP98	20APR98	24SEP98	-4			FRS - KE Inpool Process Equip Instl FY98						
CWA4188A	01OCT98	31DEC98			0			FRS - KE Inpool Process Equip Instl FY99						
CWA4190	10MAR98		03SEP97		-128			FRS - Start KW Inpool Process Equip Installation						
CWA4200	12JAN98		13FEB98		24			FRS - Start KE Facility Modifications						
CWA4205	17JUL98		20APR98*		-61			FRS - Start KE Inpool Process Equip Installation						
CWA4210		31DEC98		02NOV98*	-39			Cmpl KE FRS Construction						
CWA5295	01OCT96A	30SEP97	01OCT96	30APR97	-105			FRS - Cmpt Cold Development Testing @ 305 Bldg						
CWA5295A	01OCT97	14NOV97			0			FRS - Cmpt Cold Development Test @ 305 Bldg FY98						
CWA5315		14NOV97*		30MAY97	-117			FRS - Issue Cold Development Test Reports						
CWA5335	01OCT96A	25MAR97A	01OCT96*	31JAN97	-36			FRS-Test Plan						
CWA5350		25MAR97A		31JAN97	-36			FRS-Release Revised Test Plan						
CWA5355	02JAN97A	30SEP97	02JAN97*	30APR97	-105			FRS-Test Facility, Equip Dsn & Upgrade @ 305 Bld						
CWA5355A	01OCT97	15DEC97			0			Test Facility, Equip Dsn & Upgd @ 305 Bld - FY98						
CWA5358	28JUL97*	18NOV97			0			FRS - Prep CVT Test Spec & Instructions						
CWA5366	17NOV97	23DEC97			0			FRS - Install KW Manips Sys 1 for CVT						
CWA5368		23DEC97			0			FRS - KW Manips Sys 1 Ready for CVT						

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var. E F	FY07	FY08	FY09	FY00	FY01	FY02	FY03	FY04	FY05
CWA5370	26DEC97	06FEB98	01MAY97	29JUL97	-133		FRS - KW CVT Manips (Sys 1) @ 305 bldg							
CWA5373		01DEC97			0		FRS-Rcv KE Manips (Sys 2) @ 305 Bldg							
CWA5375	17FEB98	30MAR98			0		FRS - Burn-In of KE Manips (Sys 2) @ 305 Bldg							
CWA5395		14NOV97	20MAY97	02JUN97	-116		FRS-Rcv KW Manips (Sys 1) @ 305 Bldg							
CWA5420	09FEB98	13FEB98	29JUL97	04AUG97	-133		FRS-Rmv/Dlvr FRS KW Manips Sys 1 for KW Install							
CWA5425	31MAR98	06APR98			0		FRS-Rmv/Dlvr FRS KE Manips Sys 2 for KE Install							
CWA5428	09FEB98	04MAY98			0		FRS-Prepare Cold Validation Test Report							
CWA5430		04MAY98		04AUG97	-188		FRS-Issue Final Cold Validation Test Report							
CWA7020A	01OCT96A	14FEB97A	01OCT96*	26FEB97	7		FRS - Develop draft FRS CSER (PSS/SAE)							
CWA7020B	01OCT96A	31DEC96A	01OCT96	26FEB97	39		FRS - Develop draft FRS Safety Assessment (BNFL)							
CWA7020C	25FEB97A	11NOV97	27FEB97*	12MAR97	-170		FRS - Develop Final FRS CSER							
CWA7020G	12NOV97	25NOV97			0		FRS - Conduct Final FRS CSER Review							
CWA7020H	26NOV97	10DEC97			0		FRS - Incorporate Final FRS CSER Comments							
CWA7020I		10DEC97			0		FRS - Issue Final FRS CSER							
CWA7020X	01OCT97	30SEP98			0		FRS - Safety Analysis FY98							
CWA7021C	29OCT97	27JAN98			0		FRS - Develop Final FRS SAD							
CWA7021G	28JAN98	10FEB98			0		FRS - Conduct Final FRS SAD Review							
CWA7021H	11FEB98	25FEB98			0		FRS - Incorporate Final FRS SAD Comments							
CWA7021I		25FEB98			0		FRS - Issue Final FRS SAD							
CWA7022A	04AUG97*	29AUG97			0		Prep FRS Preliminary SAD (PSAD)							
CWA7022B	02SEP97	05DEC97			0		Rvw - Incorp Comments - Approve PSAD							
CWA7028	02JUN97A	29JUL97			0		FRS - Alara Committee Rvw&Apprv Alara Assessment							
CWA7030A	18FEB97A	24FEB97A	27FEB97	05MAR97	7		FRS - Rvw Draft FRS CSER							
CWA7030B	01JAN97A	03MAR97A	06MAR97	12MAR97	7		FRS - Rvw Draft FRS Safety Assessment							

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
WMA7030E		01NOV96A		01NOV96*	0	FRS - Provide FRS FHA Input								
WMA7030F	01OCT96A	01NOV96A	01OCT96	01NOV96	0	FRS - Provide FRS Input/Rvw RTE & NOC								
WMA4005	08OCT96A		08OCT96*		0	CD3-FRS Procurement Approval								
WMA4008	15SEP97		02MAY97		-92	FRS - KW-Submit Facility Mods Risk Assessment								
WMA4010		03OCT97		22MAY97	-92	FRS - KW-Facility Mods-Auth to Proceed								
WMA4011		16JUL98		21NOV97	-160	Cmpl KW FRS Construction								
WMA4011PA		16JUL98		30NOV97*	-157	Cmpl KW FRS Construction								
WMA4012	09FEB98		05AUG97		-128	FRS - KW-Submit Installation Risk Assessment								
WMA4014		02MAR98		25AUG97	-128	CD3B-FRS Installation								
WMA4016	29SEP97		16JAN98		74	FRS - KE-Submit Facility Mods Risk Assessment								
WMA4018		17OCT97		05FEB98	74	FRS - KE-Facility Mods-Auth to Proceed								
WMA4020	24MAR98		23MAR98		-1	FRS - KE-Submit Installation Risk Assessment								
WMA4022		13APR98		10APR98	-1	FRS - KE-Installation-Auth to Proceed								
<b>BUDGE REMOVAL PROJECT 1.4.1.04.04</b>														
DSR003	26JUN97	30JUN97			0	Write recommendation letter to RL								
DSR004	02JUN97A	25JUN97			0	EDH prepare recommendation								
DSR005	01JUL97	28JUL97			0	DOE RL review recommendation letter								
DSR006		28JUL97			0	DOE issue recommendation letter to DESH								
DSR047A	01OCT97	26NOV97			0	Prepare Authorization Basis Task Plan								
DSR047B	01DEC97	05DEC97			0	USQ Evaluation								
DSR047C	08DEC97	30APR98			0	Update Safety Assessment								
DSR047D	01MAY98	28JUL98			0	PHMC review Safety Assessment								
DSR051	14FEB02	11APR02			0	Incorp Comments & train TWRS Operators								
DSR052A	22JUL97*	05OCT97			0	Prep Task Plan for Authorization Basis								
DSR052B	07OCT97	11AUG98			0	Revise Source Term Documentation								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
DSR052C	12AUG98	01APR99			0			Revise CSER						
DSR052D	02APR99	22APR99			0			Perform USQ Evaluation						
DSR052E	23APR99	02JUN99			0			Rvw Safety Documentation for Impacts						
DSR052F	03JUN99	31MAY00			0			Perform Safety Analysis						
DSR052G	01JUN00	22SEP00			0			Tier I Review						
DSR052H	25SEP00	25JAN01			0			Tier II Review						
DSR052J	26JAN01	26APR01			0			Tier III Review						
DSR052K	27APR01	24OCT01			0			Issued Revised Safety Documentation						
DSR052L		24OCT01			0			Safety Documentation Complete						
DSR052X	07OCT97	30SEP98			0			TWRS Regulatory & Safety Documentation FY98						
DSR053A	01OCT98	30SEP99			0			TWRS Regulatory & Safety Documentation FY99						
DSR053B	01OCT99	29SEP00			0			TWRS Regulatory & Safety Documentation FY00						
DSR053C	02OCT00	28SEP01			0			TWRS Regulatory & Safety Documentation FY01						
DSR053D	01OCT01	10JUN02			0			TWRS Regulatory & Safety Documentation FY02						
DWV1204102	14JUL97*	25JUL97			0			PREP Chem Pre Treat Process Reqmts Document						
DWV1204104	28JUL97	30SEP97			0			Prepare Process Tech Manual - FY97						
DWV1204106	01OCT97	30SEP98			0			Prepare Process Tech Manual - FY98						
DWV1204108	03AUG98	29OCT98			0			Develop Process Flow Sheets						
DWV1204120	21JUL97*	15AUG97			0			Prep EM-67 Project management plan						
DWV1204122	21JUL97	15AUG97			0			PREP Testing Data Quality Objectives (DQO)						
DWV1204123	21JUL97	15AUG97			0			Prepare Testing QA Project Plan						
DWV1204124	21JUL97	15AUG97			0			Obtain RD&D Permit						
DWV1204126	21JUL97	15AUG97			0			Prepare Process Cold Test Work Plan						
DWV1204128	18AUG97	30SEP97			0			Conduct Process Cold Test						

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF
DW1204130	01OCT97	31DEC97			0
DW1204140	21JUL97	29AUG97			0
DW1204142	02SEP97	30SEP97			0
DW1204144	01OCT97	30JAN98			0
DW1204146	02FEB98	31JUL98			0
DW1204150	30OCT98	04AUG99			0
DW1204300	06MAY97A	30JUN97			0
DW1204310		30JUN97			0
DW1204315	01JUL97	14AUG97			0
DW1204320	15OCT97*	14NOV97			0
DW1204330	17NOV97	16JAN98			0
DW1205010		31MAR97A	01OCT96	31MAR97	0
DW1205015	08APR97A		01APR97	13MAY97	26
DW1205020		30MAY97A			0
DW1205100		30SEP97*		30SEP97	0
DW1205110		30SEP97*	22AUG97		-27
DW1205200	01JUL97*	31DEC97			0
DW1205300	01MAR97A	31JUL97			0
DW1205310	01AUG97	23JAN98			0
DW1206	01OCT96A	30SEP97	01OCT96	30SEP97	0
DW1208100	23FEB98*	19FEB99			0
DW1208199		19FEB99			0
DW1703	05APR99	31MAR00	01APR98*	31DEC98	-314
DW1703A	17MAR99*				0

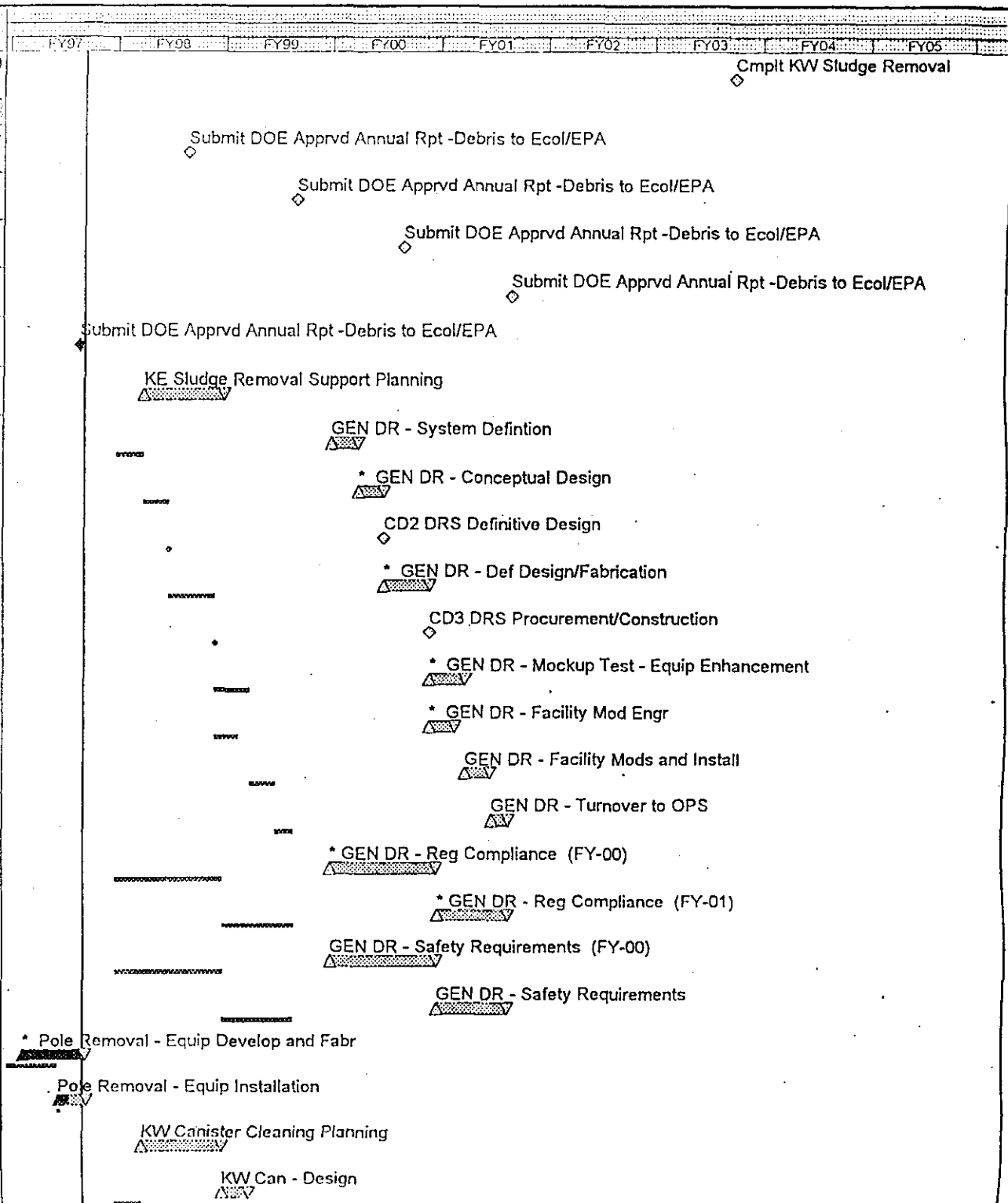


Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W1A00	21JAN02	18MAR02			0									
W1A01	01OCT96A	30SEP97	01OCT96	31JUL97	-42	KE Floor Sludge Retrv: Engineering								
W1A02	01DEC97*	21JUL98	06JAN98*	02JUL98	-11	KE Floor Sludge Retrv: Design								
W1A04	29JAN98	31AUG99	07JUL98	30SEP98	-230	KE Floor Sludge Retrv: SAR Update								
W1A05	17SEP98	06MAY99			0	KE Floor Sludge Retrv: Fabrication								
W1A05A		01SEP98			0	KE Floor Sludge Retrv: CD3A for Procure/Fab								
W1A06	17SEP98	06MAY99			0	KE Floor Sludge Retrv: Reg Compliance								
W1A060	01DEC97	27OCT99			0	KE floor removal equipment project management								
W1A07	17SEP98	06MAY99			0	KE Floor Sludge Retrv: Work Pkg Prep								
W1A07A	22APR99				0	KE Floor Sludge Retrv: CD3B Equip Installation								
W1A08	07MAY99	31AUG99			0	KE Floor Sludge Retrv: Install and Start-up								
W1A09	01SEP99	27OCT99			0	KE Floor Sludge Retrv: Readiness Assessment								
W1A09A		03NOV99			0	KE Floor Sludge Retrv: CD4 Operations Approval								
W1B01	06JUL99*	23DEC99	02FEB98*	30SEP98	-309	KW SLDG: Design								
W1B01A	04OCT99	23DEC99			0	KW SLDG: Regulatory Compliance & Safety FY00								
W1B01B	28NOV01	25JAN02			0	KW SLDG: Regulatory Compliance & Safety FY02								
W1B02	02OCT00*	09APR01			0	KW SLDG: Fabrication								
W1B03	10APR01	27NOV01			0	KW SLDG: Installation								
W1B09	28NOV01	25JAN02			0	KW SLDG: Readiness Assessment								
W1C01	02JAN98	05AUG98			0	PreTreat: Prepare Process Flow Diagram								
W1C011	26JAN98	06NOV98			0	PreTreat: Initiate Testing								
W1C012	06AUG98	07JUN99			0	PreTreat: Prepare CDR								
W1C012A		07JUN99			0	PreTreat: Conceptual Design Complete								
W1C02	15DEC98	04AUG99			0	PreTreat: Procurement Preparations								

Transport Pkg: Readiness Assessment

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
W1C03	05AUG99	02AUG00			0				PreTreat: Prepare Def Design						
W1C03A	19JUL99				0				PreTreat: CD2 for Design						
W1C04	01OCT98*	21FEB02			0				PreTreat: Prepare SAR Update						
W1C05	13MAR00	09MAR01			0				PreTreat: Bid, Award & Fabr Equipment						
W1C05A	28FEB00				0				PreTreat: CD3 for Procurement/Fabrication						
W1C06	03AUG00	18MAY01			0				PreTreat: Reg Compliance						
W1C07	04JUN01	21FEB02			0				PreTreat: Construct & Install						
W1C13		31JUL01			0				CVD Operation Complete						
W1C99	01OCT97	21FEB02			0				Chem Pre Treat Project Management						
W1D01	17JUN02	09OCT02	01OCT97*	30SEP99	-759								Perform Sludge Transfer System ORR		
W1D01999		09OCT02			0								Compl ORR - Sludge Xfer from K-Basins		
W2101	31DEC99	29AUG01	01FEB99	28SEP00	-230				KE Floor Sludge "Just-in-time" for Fuel						
W2101000	31DEC99		01FEB99		-230				Start KE Floor Sludge Retrieval						
W2102	31DEC99	29AUG01	01FEB99	28SEP00	-230				KE Fuel Canister Sldg Storage to Weasel Pit						
W2103	30AUG01	22FEB02	29SEP00	04JAN01	-285								Complete KE Sldg Retr Storage to Weasel Pit		
W2104	10OCT02	23SEP03	29SEP00	30AUG01	-517								Transfer KE Weasel Pit Sldg to Tank Farms		
W2104000	10OCT02		29SEP00		-509								Start Sldg Transfer from KE Basin to TWRS		
W2104999		23SEP03		30AUG01	-517								Cmpl Sludge Removal From K		
W2105	10OCT02	06DEC02	04JAN00*	01MAR00	-696								KW Pit Sldg Retrieval		
W2106	10OCT02	05FEB03	02MAR00	21AUG00	-616								KW Canister Sldg Removal		
W2A01	06FEB03	30MAY03			0								KW FRS Sldg Area Removal		
W2B01	10OCT02	20FEB03			0								KW Remaining Floor Sldg Removal		
W2C01	21FEB03	27JUN03			0								KW Sldg Transfer		
W2C01000	10OCT02				0								Start KW Sldg Transfer		

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F
W2001999		27JUN03			0
DRS REMOVAL PROJECT 1.4.1.04.05					
W11031		29MAY98*			0
W11041		01JUN99*			0
W11051		31MAY00*			0
W11061		31MAY01*			0
W1200		30MAY97A			0
W1500	02JAN98*	30SEP98			0
W1501	01OCT99*	31DEC99	01OCT97*	31DEC97	-502
W1502	04JAN00	30MAR00	02JAN98	31MAR98	-502
W1502999		30MAR00		31MAR98	-502
W1503	31MAR00	30AUG00	01APR98	31AUG98	-502
W1503999		30AUG00		31AUG98	-502
W1504	31AUG00	02JAN01	01SEP98	31DEC98	-502
W1505	31AUG00	27NOV00	01SEP98	24NOV98	-502
W1506	03JAN01	30MAR01	04JAN99	31MAR99	-502
W1507	02APR01	30MAY01	01APR99	28MAY99	-502
W1508	01OCT99	29SEP00	01OCT97	30SEP98	-502
W15081	02OCT00	30MAY01	01OCT98	28MAY99	-502
W1509	01OCT99	29SEP00	01OCT97	30SEP98	-502
W15091	02OCT00	30MAY01	01OCT98	28MAY99	-502
W17013	22NOV96A	24JUN97	01OCT96	18MAR97	-69
W17014	24MAR97A	27JUN97	19MAR97	31MAR97	-63
W1900	02JAN98*	30SEP98			0
W1901	01OCT98*	31DEC98	01OCT97*	31DEC97	-251





Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W2601999		02OCT02		26FEB01	-403										<div>Cmpl K Basin Debris Removal</div>
W26011	06JAN97A	04AUG97	01APR97	26JUN97	-25		<div>Pole Removal Ops</div>								
W26012	16JUN97	18AUG97	28APR97	26JUN97	-35		<div>Pole Removal Ops - Waste Disposal</div>								
W2601299		18AUG97		26JUN97	-35		<div>Cmplt Removal of Poles from KE Basin</div>								
W2602	06JAN97A	16JUL97	30APR97	29MAY97	-32		<div>Clear KE Debris to Support Fuel Ops</div>								
W27011	30JUN97*	21JUL97	03MAR97	27MAR97	-79		<div>Clean SLP - Vacuum Sludge Ops</div>								
W27012	30JUN97*	21JUL97	28MAR97	28MAY97	-36		<div>Clean SLP - Retrv Lids &amp; Debris OPS</div>								
W2701299		21JUL97		28MAY97	-36		<div>MS [RL] Removal of Debris from SLP in KE Basin</div>								
W2801	30MAY01	24APR02	26FEB98*	24AUG99	-669										<div>K West Gen Debris Removal OPS</div>
W2A01	30MAY01	24APR02	30DEC96*	31MAR97	-1,272										<div>KW Basin Rack Removal Ops</div>
W2B01	01DEC97*	30SEP98			0		<div>Perform Pre Removal KE Debris Ops</div>								
WATER TREATMENT 1.4.1.04.06															
W1504	01OCT96A	28FEB97A	01OCT96	31JAN97	-19		<div>IWTS Definitive Design (90%)</div>								
W15040	01OCT96A	21FEB97A	01OCT96	31JAN97	-14		<div>IWTS Definitve Design</div>								
W15041	24MAR97A	27AUG97	03FEB97	30APR97	-82		<div>Final KW Design [New Scope]</div>								
W1504100		03APR97A			0		<div>Provide KW IWTS Performance Spec to Permitting</div>								
W150411	24MAR97A	09MAY97A	01APR97*	03JUN97	16		<div>Final KE Definitive Design</div>								
W150411A	13OCT97	27FEB98			0		<div>Final KE Definitive Design</div>								
W15042A	22MAY97A	29AUG97			0		<div>CNSI Definitive Design - KW</div>								
W15042A1	30JUN97A	18JUL97A			0		<div>Finalize Particulate Holding Tank Location</div>								
W15042A2	16JUN97	20JUN97			0		<div>DESH Mgmt Rvw/Appvl of Holding Tank Location</div>								
W15042A3	23JUN97	28JUL97			0		<div>CNSI Design Particulate Holding Tank</div>								
W15042A4	29JUL97	04AUG97			0		<div>DESH Rvw &amp; Comment on Holding Tank Design</div>								
W15042A5	05AUG97	07AUG97			0		<div>CNSI Incorp Comments &amp; Issue Holding Tk Design</div>								
W15042C	07APR97A	22JUL97			0		<div>PLC+ Definitive Design - KW</div>								

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
GW1504988		29AUG97		30APR97	-84									
GW1504989		10OCT97		28MAY97*	-94									
GW1504995		12JAN98			0									
GW1504998		27FEB98		03JUN97	-184									
GW1504999		20MAR98		15JUL97*	-171									
GW1506105	13OCT97	07NOV97	02JUN97	31JUL97	-70									
GW15061A	13OCT97	30MAR98			0									
GW15061B	31MAR98	20AUG98			0									
GW15061C	07APR98	27APR98			0									
GW15061D	13OCT97	01SEP98			0									
GW15061E	13OCT97	03SEP98			0									
GW15061X	01OCT97	30JAN98			0									
GW15062	03SEP98	20JUL99	02JAN98*	11NOV98	-170									
GW1506215	03SEP98	28JAN99	02JAN98*	22MAY98	-170									
GW1506230	29JAN99	29MAR99	26MAY98	23JUL98	-170									
GW1506240	03SEP98*	09APR99	02MAR98	01OCT98	-130									
GW1506250	23MAR98*	18MAY98	01OCT97*	03APR98	-31									
GW1506260	03SEP98*	09APR99	02MAR98	01OCT98	-130									
GW15062A	13OCT97	03DEC97			0									
GW15062B	04DEC97	19JAN98			0									
GW15063A	04APR97A	18JUL97A			0									
GW15064A	02JUN97A	15SEP97			0									
GW15064B	13OCT97	09DEC97			0									
GW15064C	13OCT97	21NOV97			0									

Compl IWTS KW Def Design [SNF 1.1.4 - AUG 31, 97]

CD3 KW IWTS Procurement / Construction

CD3B - KW IWTS CNSI Installation Approval

Compl IWTS KE Definitive Design

CD3A KE IWTS Procurement / Construction

KW - Demin Water System Upgrade

Procure, Fab & Test CNSI Equipment - KW

Install CNSI Equipment

Install CNSI supplied Booster Pmps & tie in ppg

CNSI Title III As-Built & Construction Support

Construction Support - FY98

KW - DESH Procure IXM's

\* K-East Construction

\* KE - ANNEX BLDG

KE - IXM Relocation

KE - Weasel Pit Mods

KE - Chiller Bay Improvements

KE - Other Systems

PLC+ Procure & F.A.T. Panels A&B

Install & Test Pnls A&B Incl Software

CVD Off Load Design - KW

KW - Design / Work Pkg IXM Mod's

KW - IXM Piping Mod's / Relocate

KW - Electrical Modifications

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	FY07	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W15064D	24NOV97	23JAN98			0			KW - Weasel Pit Modifications						
W1507110	21AUG98	03SEP98	12NOV97	09DEC97	-186			KW - CAT's						
W1507199		03SEP98			0			Compl KW IWTS Constr / Installation						
W15071PA		03SEP98		31DEC97*	-171			Compl KW IWTS Const/Install						
W1507210	21JUL99	13AUG99	12NOV98	09DEC98	-170			KE - CAT's						
W1507299		13AUG99		09DEC98	-170			Compl KE IWTS ATP						
W1520A	01OCT98	30SEP99			0			Regulatory Compliance & Safety Suppt (FY-99)						
W1602	01OCT97	30SEP98	01OCT97	30SEP98	0			IWTS PROJECT MGMT (FY-98) - Expense						
W1602C	01OCT97	30SEP98			0			IWTS PROJECT MGMT (FY-98) - CAPITAL						
W1603C	01OCT98	30SEP99			0			IWTS PROJECT MGMT (FY-99) -Capital						
W1603E	01OCT98	30SEP99			0			IWTS PROJECT MGMT (FY-99) - Expense						
W1999095	02SEP97*	03OCT97			0			Prep Limited Risk Assessment for CD 3A						
W1999100	02SEP97	15SEP97			0			Conduct Final IWTS SAD Internal Review						
W1999105	16SEP97	29SEP97			0			Incorporate Final Iwts Comments to SAD						
W1999125	01OCT97	12JAN98			0			KW Safety Authorization Documents						
W1999150	23MAR98	29JUL98			0			KE Safety Authorization Documents						
W1999155		29JUL98			0			CD3B- KE IWTS Installation Approval						
W1999160	23MAR98	02SEP98			0			KE - Procure Equipment						
W1999160	01OCT99*	31MAR00			0			KE Design-Procure Equip for Tritium Reduct Proj						
W24001E	19OCT98	13NOV98	26DEC97	30DEC97	-222			Perform KW IWTS Readiness Review						
W24002A	04SEP98	25SEP98	10DEC97	15DEC97	-196			Perform KW IWTS Pre-Op Test						
W24002B	28SEP98	16OCT98			0			Perform KW IWTS Op Test						
W24011	04SEP98	09OCT98	10DEC97	26FEB98	-157			KW OTP and Punch						
W2401199		13NOV98		26FEB98	-182			CD4-KW IWTS Ops Approval						

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W124012	16AUG99	01SEP99	10DEC98	28JAN99	-150				KE OTP Δ					
W12401230	16AUG99	01SEP99	10DEC98	30DEC98	-170				KE IWTS Startup Δ					
W12401299		14JAN00		29JAN99	-240				CD4-KE IWTS Ops Approval ◇					
W124012A	16AUG99	01SEP99			0				KE Punchlist Δ					
Disposition of IXC's									Spent IXC Disposition (FY-99 Deferred to FY-00) Δ					
W123031	01OCT99	29SEP00			0									
MCO ACQUISITION 1.4.1.05														
W124001A		02OCT97			0				EA 1 Characterization Data Available ◇					
W124001B	03OCT97	16OCT97			0				EA 1 Analysis/Charact Data Sludge Qtr Rpt Δ					
W124001C	12SEP97*	25SEP97			0				EA 1 NS Closure Review Δ					
W124001D		25SEP97			0				EA-1 (Sludge Quantity) Closed ◇					
W124005F	15JUL97*	30JUL97			0				EA5 NS Closure Review Δ					
W124005J		30JUL97*			0				EA-5 (Post CVD Water) Closed ◇					
W12400A		06OCT97			0				Initial MCO Topical P/T Model ◇					
W12400D	07OCT97	30OCT97			0				Update CSB/HCS Thermal Analysis Δ					
W12400E	31OCT97	01DEC97			0				Indepnt Revw, Revs, Aprve, Submit to Data Book Δ					
W12400F		01DEC97			0				Thermal Safety Basis Approved ◇					
W12400G	31JUL97*	30SEP97			0				Incorporate Revised FSA in Databook Δ					
W12400J	24OCT97	19DEC97			0				Develop SNF Recovery Plans Δ					
W124044A	31OCT97	06NOV97			0				Recovery Process Hazards Analysis (EA-44) Δ					
W124044B	07NOV97	20NOV97			0				Close (Recovery Procedures) EA044 Δ					
W124044C		20NOV97			0				EA-44 (Recovery Procedures) Closed ◇					
W124051A	01OCT97	14OCT97			0				Close EA (FSA) 051 Δ					
W124051B		14OCT97			0				EA-51 (FSA) Fuel Surface Area Closed ◇					
W124052A	07OCT97	30OCT97			0				EA 52 (Uranium Corrosion Analysis) Δ					

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W124052B	31OCT97	13NOV97			0				EA 52 (U Corrosion) Closure Review					
W124052C		13NOV97			0				EA-52 (Uranium Corrosion) Closed					
W124053D	07OCT97	30OCT97			0				Uranium Hydride Model Analysis					
W124053F	31OCT97	13NOV97			0				EA53 (Uranium Hydrides) Closure					
W124053J		13NOV97			0				EA-53 (Hydrides Behavior) Closed					
W124055D	31OCT97	06NOV97			0				EA 55 CVD/CSB Shipping Window Analysis					
W124055F	07NOV97	20NOV97			0				EA 55 (Shipping Window) (Closure)					
W124055J		20NOV97			0				EA-55 (Shipping Window) Closed					
W124066F	29SEP97	10OCT97			0				EA 66 (MCO Blowdown) Closure					
W124066J		10OCT97			0				EA-66 (MCO Blowdown) Closed					
W222		07MAR97A		07MAR97	0				Parsons Complete Design					
W277	02JAN97A	30SEP97	01MAY97	30SEP97	0				MCO F&Rs / Performance Spec Updates					
WA0203A	17NOV97	06AUG98			0				MCO Ops Support - Port Repair Program					
WA0203C	15DEC97	01SEP98			0				MCO Ops Sup- MCO Repair Area @ CSB					
WA0250	27JAN97A	07MAR97A	27JAN97	07MAR97	0				Review MCO Phase II Design					
WA0251	10MAR97A	23MAY97A	10MAR97	08APR97	-33				Release MCO Phase II Design					
WA0252		23MAY97A		08APR97	-33				Cmpl MCO Design					
WA0940	01OCT96A	24JAN97A	01OCT96	24JAN97	0				Perform MCO Ph II Design Update					
WA0941	01OCT96A	20DEC96A	01OCT96	20DEC96	0				MCO Phase II 60% Rev, Disposition/ Phase II 90%					
WA0942	23DEC96A	10MAR97A	23DEC96	07MAR97	-1				MCO Phase II 90% Rev,Disposition/100%:Final Rev					
WA0980	04JUN98		13MAR98		-58				MCO's Available for Operations					
WA1160	20JAN97A	30APR97A	27JAN97	30APR97	0				Prepare RFP/ Evaluate Fab Bids					
WA1160.1	27JAN97A	23APR97A	27JAN97	23APR97	0				Prep/Bid/Award MCO Closure Tool					
WA1160A	01MAY97A	30MAY97A			0				DESH Prepare BARFO					

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
VA1160B	02JUN97A	20JUN97			0	Bidders Prepare BARFO
VA1160C	23JUN97	15AUG97			0	DESH Evaluate BARFOs
VA1160D	18AUG97	29SEP97			0	FDH & DOE Procurement Approval
VA1163	18NOV96A	10MAR97A	18NOV96	25FEB97	-9	Vendor Prequalification
VA1170	01OCT97	21MAY98	01MAY97	30SEP97	-161	Fab MCO 1st 5
VA1170.1	01MAY97A	30SEP97	28MAR97	30SEP97	0	FY97 Fab/Test MCO Closure Tool
VA1170.3	01OCT97	30SEP98	01OCT97	30SEP98	0	FY98 Fab/Test MCO Closure Tool
VA1170.4	01OCT98	30SEP99			0	FY99 Fab/Test MCO Closure Tool
VA1170A	01OCT98	19MAR99			0	Spare Parts Procurement
VA1170B	01OCT97	18JUN98			0	Empty MCO Grapple (Design, Procure, Fab, Test)
VA1171A	01OCT98	30SEP99	01OCT97	30SEP98	-251	FY99 Fab MCO 395 Order
VA1171B	01OCT98	20MAY99	01OCT97	02MAR98	-308	Fab and Receipt of MCO #6
VA1172	01OCT99	29SEP00	01OCT98	30SEP99	-251	FY00 Fab MCO 395 Order
VA1173	02OCT00	30APR01	01OCT99	28APR00	-251	FY01 Fab MCO 395 Order
VA1176	22MAY98	16OCT98	03MAR98	18SEP98	-20	1st 5 MCOs Receipt, Inspection, Storage
VA1177	21MAY99	30SEP99	01OCT98	30SEP99	0	FY99 MCO Receipt, Inspection, Storage of MCO's
VA1178	01OCT99	29SEP00	01OCT99	31JUL00	-43	FY00 MCO Receipt, Inspection, Storage
VA1179	02OCT00	30APR01			0	FY01 MCO Receipt, Inspection, Storage
VA1180		21MAY98		02MAR98	-58	Cmpl Fab & Delivery of First Shipment of MCO
VA1200		30APR01		31JUL00	-188	Cmpl Fab & Delivery of MCO's
VA1250	01OCT96A	30DEC96A	01OCT96	30DEC96	0	Approve MCO Topical/Design Report
VA1250A	16JUN97	28JUL97			0	Finalize EA Closure/Accident Strategy
VA1250B	29JUL97	16SEP97			0	Integrate MCO Topical Accident Scenarios
VA1251A	07OCT97				0	Design Data Input to MCO Topical

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
WA1251B		19DEC97			0									
WA1252B	17SEP97				0									
WA1252C	21NOV97	08JAN98			0									
WA1252D	16JUN97	22OCT97			0									
WA1252E	23OCT97	07JAN98			0									
WA1253	09JAN98	20MAR98			0									
WA1254	23MAR98				0									
WA1255	23MAR98	24APR98		14APR97	-259									
WA1255A		19DEC97			0									
WA1255B	14APR98	27APR98			0									
WA1255C	27APR98	22MAY98			0									
WA1256		22MAY98			0									
WA1257	26MAY98	22JUN98			0									
WA1258	27APR98	22JUN98			0									
WA1259		22JUN98			0									
WA1260	01OCT96A	14APR97A	01OCT96	14APR97	0									
WA1261	31DEC96A	14APR97A	31DEC96	28FEB97	-31									
WA1262	07FEB97A	16MAY97A	07FEB97	25MAR97	-38									
WA1262A	19MAY97A	30MAY97A			0									
WA250.5B	01OCT96A	27NOV96A	11OCT96	27NOV96	0									
WA250.5D	01OCT96A	27NOV96A	01OCT96	27NOV96	0									
WA250.5E	27MAY97A	30SEP97			0									
WA250.5F	29OCT97	11DEC97			0									
WA250.5G	29OCT97	11DEC97			0									

Characterization Input to MCO Topical

Finalization of MCO Topical Report Content

Prep. Ch 4 & 11, Compile, Print MCO Topical

Resolve RCR's/Rewrite Chapters

Final Prep MCO Topical Report

Conduct MCO Topical Rpt Internal Rev

Resubmit MCO Topical to DOE RL

RL Review of MCO Topical

MCO Topical Last Technical Data

Technical Data Review

Resolve DOE MCO RCR's

MCO Topical Ready for SAR Reference

DOE Prepare MCO Topical SER

Incorp RL Comments into MCO Topical

RL Approval of MCO Topical

MCO Topical Safety Report

RL & RP Review

MCO Incorp Comments & Rev Topical/Design Report

DOESH Internal Rev of Topical Reports

Release MCO Closure Test Report

Perf. MCO Follow On Tests

Perform Seal & Galling Testing

Perform Basket Stacking Tests

Perform Basket Load Tests (real fuel)

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
WA250.5H	01OCT97	18JUN98			0		Develop Leak Test Program							
WA250.5J	10FEB98	24MAR98			0		Perform Dip Tube Insertion Tests							
WA250.5K	10FEB98	07APR98			0		Perform Main Seal Leak Tests							
WA250.5L	04MAR98	14APR98			0		Perform Shield Plug Insertion Test							
WA2500	28MAY97A	29SEP97			0		Redesign Scrap Baskets/Thermal & Criticality Mod							
WA260	30SEP97	09FEB98			0		Fab of Prototype Components							
WM002	30SEP97		01MAY97		-104		Award MCO Fab Contract							
WM008		30DEC96A		30DEC96	0		Appv MCO Topical/Design Rpt							
WM017		27NOV96A		27NOV96	0		M/S-I-Release MCO Closure Test Report							
WMCD3		08JUL98		30APR97	-297		CD3-MCO Fabrication Appr							
WMPA132	30SEP97		01MAY97		-104		Cmpl MCO Design and Approve Procurement							
CASK TRANSPORTATION SYSTEM														
W001.3		15JAN97A		22JAN97	5		Complete Cask Design							
W001.5		26JUN98		19JUN98	-5		Cmpl Cask/Trans Fab & Delivery							
W004.2E	02JAN98	01JUN98			0		C/T Ops Sup- Cask Drop Recovery Plans							
W004.2F	02MAR98	03AUG98			0		C/T Ops Sup- Cask Drop Recovery Equip							
W004.2G	02JAN98	01JUN98			0		C/T Ops Sup- Ship Window Recovery Plan							
W004.2H	02MAR98	03AUG98			0		C/T Ops Sup- Ship Window Recovery Equip							
W004.2J	02JAN98	30SEP98			0		C/T Ops Sup- Procedure Development							
W01B08	03FEB97A	14FEB97A	03FEB97*	14FEB97	0		Prep Cask/Transporter Ops/Maint Procedures							
W01B10	21APR97A	17JUN97	21APR97*	06JUN97	-7		Dev Cask/Transport Job Task Analysis							
W01B10D	09JUN97A	30JUN97	09JUN97	30JUN97	0		Dev Cask/Transport Training							
W01B10E	01JUL97	20AUG97	01JUL97	20AUG97	0		Dev Cask/Transport Training Materials							
W01B10F	01JUN98*	28SEP98	01OCT97*	30JAN98	-166		Update Cask/Transport Training Materials							
W01B14D	13OCT98	13OCT98	18DEC97	26DEC97	-205		Perform KW MCO/Cask Loadout Pre-Op Test							

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF													
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05				
AWJ1B15	26MAY98	19OCT98	01OCT97*	27FEB98	-162													KW Cask/Transporter Affidavits AV
AW043B	14JUL97	30SEP97			0													C/T System Tooling Design AV
AW045	01OCT96A	25APR97A	01OCT96	25APR97	0													MCO Loading Sys Design XXXXXXXXXXXXX
AW045.1	18AUG97*	11SEP97	06MAY97	28MAY97	-73													MLS RFP Dev / Release AV
AW045.1B	12SEP97	30SEP97			0													MLS Fab Bid Eval / Award AV
AW045A	11NOV96A	30JAN97A	11NOV96*	30JAN97	0													MCO Loading System Preliminary Design XXXXXX
AW045B	25FEB97A	27JUN97	18FEB97	05MAY97	-38													MLS Definitive Design XXXXXX
AW047	01OCT96A	28APR97A	01OCT96	03MAR97	-40													Develop Conveyance O&MM XXXXXXXXXXXXX
AW051.1	06DEC96A	03MAR97A	06DEC96	03MAR97	0													Final Design Review XXXXXX
AW051.1A	01OCT96A	05DEC96A	01OCT96	05DEC96	0													Final Design XXXXXX
AW051.1B	17DEC96A	18DEC96A	17DEC96	18DEC96	0													TN Presentation of Final Design Package X
BW052	01OCT96A	28APR97A	01OCT96	03MAR97	-40													Develop O&MM XXXXXXXXXXXXX
AW052.1	01OCT96A	31JAN97A	01OCT96	31JAN97	0													Long Lead Procurements of Initial Forgings XXXXXXXXXXXXX
AW063	10JAN97A	11JUL97	10JAN97	11JUL97	0													Cask System Fab (2) XXXXXXXXXXXXX
AW064	10JAN97A	01JUL97	23JAN97	01JUL97	0													Conveyance Fabrication (2) XXXXXXXXXXXXX
AW065	10JAN97A	15JUL97	10JAN97	11JUL97	-2													K West Pail System Equip Fab XXXXXXXXXXXXX
AW066	16JUL97	01AUG97	14JUL97	15AUG97	10													Integrated Cask/Pail System Test AV
AW066.2	04AUG97	15AUG97	18AUG97	28AUG97	9													Ship KW Pail Sys, Cask #1, Convey #1,2 AV
AW066.3	18MAY98	02JUN98			0													Ship MLS (KE & KW) AV
AW066C	03JUN98	23JUN98			0													Integrated Total System Test AV
AW067		15AUG97		28AUG97	9													Cmpl' Cask/Trans Delivery of 1st Set of 2 X
AW068	01OCT97	22MAY98	01OCT97	22MAY98	0													Cask System Fab (3) XXXXXXXXXXXXX
AW068.1	09DEC96A	15SEP97	09DEC96	15SEP97	0													Final Three Forgings XXXXXXXXXXXXX
AW068.1A	16SEP97	30SEP97			0													Storage of Final 3 Forgings AV

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
0769	01OCT97	22MAY98	01OCT97	29MAY98	4										Conveyance Fab (3)
0770	01OCT97	02MAR98	01OCT97	04FEB98	-17										Supporting Ancillary Equip & Tooling Fab
0770.1	26MAY98	08JUN98	26MAY98	01JUN98	-5										Factory Acceptance Test
0770.3	09JUN98	26JUN98	02JUN98	19JUN98	-5										2nd Shipment (3+3)
0775	01OCT97	01MAY98	13JUN97	20AUG97	-175										MLS Fab
0775.2	31DEC97	15MAY98	01OCT97	30JAN98	-74										MLS Performance Testing
0775A	18AUG97*	20FEB98			0										MLS Long Lead Procurement
0775C	01OCT97	30JAN98			0										MLS Fab/Deliver KW Shuttle
0775D	01OCT97	01MAY98			0										MLS Complete/Deliver KW Mast and Gantry
0775E	01OCT97	30JAN98			0										MLS Complete/Deliver KW Instrumentation Panel
0777A	01OCT96A	30DEC96A	01OCT96	30DEC96	0										Final SARP
0778	31DEC96A	11MAR97A	31DEC96	11MAR97	0										SARP Review/Approval (Internal & DOE-RL)
0778A	12MAR97A	30APR97A			0										SARP Review and Comment
0778B	01MAY97A	17JUN97			0										DOE Approval of SARP
0779	23JUN97	30SEP97	17MAR97	30SEP97	0										SARP Updates
0779.1	01OCT97	30SEP98	01OCT97	01JUN98	-84										SARP Updates
0779.2	01OCT98	01DEC98			0										SARP Updates
0780	18AUG97	29AUG97	29AUG97	12SEP97	9										Receive Transportation Equipment
VM0042		16DEC96A		22JAN97*	24										CD3-Cask/Trans Fabrication Appr
VM006		15JAN97A		15JAN97	0										Complete Cask Transport Design
VM006PA		22JAN97A		22JAN97*	0										Complete Cask/Transport Design
VM007		11JUL97		15AUG97	25										M/S-I-Cmplt Initial Cask Fab
VM008		22MAY98		22MAY98	0										M/S-I-Cmplt C/T Final Cask Fab
VM015		22MAY98		29MAY98	4										M/S-I-Cmplt C/T Final Trnsprt Fab

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
121018		11MAR97A		11MAR97	0		◆								
							◆								
121022		15AUG97		28AUG97	9		◆								
							◆								
ility Upgrades for Transport															
12091000	01OCT96A	21FEB97A			0	Facility Mods Design	▲								
12091001	01OCT96A	31DEC96A			0	Facility Mods Design Carry-Over	▲								
12091100	01OCT96A	14AUG97			0	KW Facility Mod Acquisition	▲								
12091101		09DEC96A			0	CD3A Crane MOD Procurement	◆								
12091105	01OCT96A	30SEP97			0	KW CTFM - Construction/Installation	▲								
12091109	02JUN97A				0	CD3B Crane MOD Construction	◆								
12091110	30OCT96A	31DEC96A			0	KW CTFM - Pipe Demo (Gen Pipe/Sand Filter)	▲								
12091115	02DEC96A	04APR97A			0	KW CTFM - MEI Reroutes	▲								
12091120	01DEC97	14JAN98			0	KW CTFM - Pipe Demo [ Aux Loop ]	▲								
12091127	01DEC97*	14JAN98			0	KW CTFM - Clear Transfer Channel	▲								
12091128	05MAY97A	03AUG97			0	KW CTFM - Design / Work Pkg Prep SLP Cleanup	▲								
12091128A	07JUL97*	05AUG97			0	KW CTFM - ECN to SAR/TSR for Sludge Pumping OPS	▲								
12091129	11AUG97	16SEP97			0	KW CTFM - Install Sldg Screen / Cleanup	▲								
12091130	17SEP97	30SEP97			0	KW CTFM - Install Pail Support Structure	▲								
12091130A	01OCT97	25NOV97			0	KW CTFM - Design Ops Loadout Interface System	▲								
12091130B	26NOV97	13JAN98			0	KW CTFM - Install OPS Loadout Iface System	▲								
12091131		30SEP97			0	SNF-1.1.2 Cmpl KW Install of Pail Support	◆								
12091133	04AUG97*	29SEP97			0	KW CTFM -Prep TO MCO System Design	▲								
12091134	01OCT97*	25MAR98			0	KW CTFM - Design/Wrk Pkg MCO Load System	▲								
12091134A	12JAN98*	09MAR98			0	KW CTFM - Prep TO MCO Load System Install	▲								
12091134B		01DEC97*			0	KW CTFM - MLS Fab Dwg's Available	◆								
12091135	31MAR98	03SEP98			0	KW CTFM - Install MCO Load System	▲								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F												
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05			
091137	27MAY98	16JUN98			0										KW CTFM - Install Immersion Pail & Cask ΔV		
091140	03AUG98*	14SEP98			0										KW CTFM - Install Floor Decon & Water Sys ΔV		
091145	03AUG98*	14SEP98			0										KW CTFM - Install Door / Windbreak ΔV		
091147	12JUN97A	01AUG97			0										KW CTFM - Perform Struc Mod's Crane ΔV		
091149	01JUL97*	29AUG97			0										KW CTFM - ECN to SAR/TSR - Load Test Cranes ΔV		
091150	18SEP97	04NOV97			0										KW CTFM - Perform Crane System Upgrades ΔV		
091153		13OCT97*			0										KW CTFM - Leak Rate Analysis Issues Resolved ◇		
091154	14OCT97	12JAN98			0										KW CTFM - SAR Rev w/ Leak Rate Analysis Cmpl ΔV		
091155	15SEP98	12OCT98			0										KW CTFM - Perform Final MEI / ATP ΔV		
091160	06OCT97*	02JAN98			0										KW CTFM - Design / Work Pkg Prep for Corr-7 Mod's ΔV		
091165	05JAN98	02MAR98			0										KW CTFM - Perform Corr-7 Mod's ΔV		
091170	10NOV97	09DEC97			0										KW CTFM - Install Compressed Air System Upgrades ΔV		
091199		12OCT98			0										Cmplt KW Cask Facility Mods ◇		
091210	05JAN98*	13FEB98			0										KE CTFM - Pipe Demo (Gen Pipe/Sand Filter) ΔV		
091211	17FEB98*	30SEP98			0										KE Facility Mod's Prj Support ΔV		
091215	17FEB98	11MAY98			0										KE CTFM - Perform MEI Reroutes ΔV		
091220	17FEB98	30MAR98			0										KE CTFM - Demo Ctr Mez/S. Walkway ΔV		
091226	01OCT98*	25MAR99			0										KE CTFM - Design / Wrk Pkg Prep MCO Load System ΔV		
091227	04MAY98*	15JUN98			0										KE CTFM - Clear Transfer Channel ΔV		
091230	30MAR99	17SEP99			0										KE CTFM - Install MCO Load System ΔV		
091232	23JUN99	22JUL99			0										KE CTFM - Install Immersion Pail & Cask ΔV		
091235	12MAY98	23JUN98			0										KE CTFM - Install Pail Immersion Platform ΔV		
091237	04MAY98*	01JUN98			0										KE CTFM - Design OPS Loadout Iface System ΔV		
091237A	24JUN98	06AUG98			0										KE CTFM - Install OPS Loadout Iface System ΔV		

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AW091240	30MAR99	10MAY99			0				KE CTFM - Perform Floor Decon & Water System					
AW091245	15SEP98	26OCT98			0			KE CTFM - Install Door / Windbreak						
AW091247	05JAN98*	02MAR98			0			KE CTFM - Perform Struc Mod's for Crane						
AW091250	03MAR98	27APR98			0			KE CTFM - Perform Crane System Upgrades						
AW091255	20SEP99	12NOV99			0			KE CTFM - Perform Final MEI / ATP						
AW091265	12MAY98	09JUL98			0			KE CTFM - Install Corr-7 Doorway Mod's						
AW091270	24JUN98	23JUL98			0			KE CTFM - Install Compressed Air System						
AW091299		12NOV99			0			Cmplt KE Cask Facility Mods						
AW091800	13OCT97*	07NOV97			0			KW CTFM - Design Upgrade to Compressed Air						
AW091820	07JUL97*	29AUG97			0			KW CTFM - Prep TO Install Pail Support Struc						
AW091830	18AUG97*	29SEP97			0			KW CTFM - Prep Task Order for Decon & H2O System						
AW091840	30SEP97	24NOV97			0			KW CTFM - Design Decon & Water System						
AW091865	03NOV97*	02JAN98			0			KE CTFM - Dsn/Work Pkg Prep for Pipe Demo						
AW091870	02FEB98*	27APR98			0			KE CTFM Dsn/Work Pkg Prep Pail Support Platform						
AW091880	26MAY98*	15JUN98			0			KE CTFM - ALARA Pkg for Door / Windbreak						
AW091890	18MAY98*	15JUL98			0			KE CTFM - Design Decon & Water System						
AW091900	01OCT97*	25NOV97			0			KE CTFM - Design / Work Pkg Prep Crane						
AW091910	10NOV97	09DEC97			0			KE CTFM - Design Compressed Air Upgrade						
AWM020	30OCT96A				0			Start Cask/Trns Basin Construction						
INF CANISTER STORAGE BUILDING														
AW03B06	01OCT96A	30SEP97	01OCT96*	30SEP97	0			Facilitate CSB SU/Construction						
AW03B06A	02JAN97A	06AUG97	02JAN97*	30JUN97	-25			Prepare CSB Preop Test Specifications						
AW03B06B	01MAY97A	30SEP97	01MAY97*	30SEP97	0			Prepare CSB Preop Test Procedures						
AW03B06C	01JUL97*	30SEP97	01JUL97*	30SEP97	0			Prepare for CSB Preop Test						
AW03B06F	01OCT97*	10JUN98			0			Prepare CSB, Pre Op Test Procedures - FY98						

Activity IC	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AW03B08		15JAN98		02SEP97*	-92									
AW03B09		16SEP98		26NOV97	-200									
AW03B12	30JUL99	30NOV99	01JUN98	30SEP98	-292									
AW03B13A	17JUN98	21OCT98	15SEP97*	22DEC97	-209									
AW03B13A1	17JUN98	16NOV98			0									
AW03B13B	18NOV98	04FEB99	21OCT97	05FEB98	-250									
AW03B13F	10JUN99	23JUN99			0									
AW03B13G	24JUN99	23JUL99			0									
AW03B14D	02JAN97A	10MAR97A	02JAN97*	07MAR97	-1									
AW03B14D1	01OCT97*	30SEP98			0									
AW03B14FD		29MAY98			0									
AW03B14FG		19JUN98			0									
AW03B14H	02SEP98	14OCT98			0									
AW03B14J	22JUN98	16SEP98	06OCT97*	21NOV97	-203									
AW03B14K		16SEP98		21NOV97	-203									
AW03B14L	23SEP98	14JAN99			0									
AW03B14P	18JAN99	29JAN99			0									
AW03B15D	24SEP98	15DEC98			0									
AW03B15F	02DEC98	15JAN99			0									
AW03B16D	01OCT96A	31OCT96A	01OCT96	31OCT96	0									
AW03B16E	01NOV96A	29APR97A	01NOV96	28FEB97	-42									
AW03B16F	24MAR97A	24APR97A	03MAR97	20MAR97	-25									
AW03B16G	16JUN97	03SEP97	15JUL97*	30SEP97	19									
AW03B16I	22JUL98	17NOV98			0									

Receive 1st CSB Sys T/O to S/U

Receive Last CSB Sys T/O to S/U

Perform CSB Post SU Validation Testing

Perform CSB Pre Op Test

Perform CSB Pre Op Facility/Eqpt Repair

Perform CSB Ops Testing

Perform CSB Pre Op Test Phase 2

Perform CSB Final Ops Testing - Phase 2

CSB Procedures Draft - Rev A

Prepare CSB Procedures - FY98

Obtain CSB Procedures SAR Review Data

Obtain CSB Procedures Last Vendor Data

Review CSB Final SAR Changes

CSB Procedures Draft Rev 0

CSB Procedures Under Change Control

CSB SAR Impl-Test Certs, Config Mgmt, etc

CSB MSA Confirmation of SAR Implementation

CSB Rev 1 Procedures Update for FSER

CSB Operator Training Update for FSER

CSB Job Training Analysis

CSB Training Design

CSB Training Development

Update CSB Training Development, S1

Staff/Train CSB BU Staff

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W03B16IA	02SEP98	30SEP98			0			Perform CSB Operators Classroom Training						
W03B16IB	04SEP97	26NOV97			0		Update CSB Training Materials							
W03B16ID	01OCT98	28OCT98			0			Perform CSB Operators OJT						
W03B16L	18NOV98	04FEB99	09JAN98	05FEB98	-250			CSB Operators OJT & JPM						
W03B16M		04FEB99		08JAN98	-270			CSB Ops Chiefs Certified						
W03B16N		04FEB99		05FEB98	-250			CSB Other Ops Certified						
W03B17A	20MAY98	17NOV98			0			Staff/Train CSB Mgmt/Tech Staff						
W03B20	17SEP98	08FEB99	01OCT97	23FEB98	-241			Prepare CSB MSA Affidavits						
W03C02	01OCT96A	30SEP97	01OCT96	30SEP97	0	Perf CSB	Staffing/Training/Readiness Prep							
W03C08	01MAR99*	29JUN99	01OCT97*	29DEC97	-378			Perform CSB Pre Operations Scope - FY98						
W050	30JUN99	31MAR00	01JUN98	03MAR99	-272			Perform CSB Operations FY 98						
W052	24APR00	31JUL01	04MAR99	28JUL00	-252			Perform CSB Operations FY 99/00						
W054	01AUG01	15NOV02	31JUL00	22MAR01	-417			Operate CSB During Fuel Conditioning Completion						
W060	18NOV02	23SEP03	23MAR01	28SEP01	-497			Operate CSB During Dry Storage						
W3304040	01OCT96A	30SEP97	01OCT96	30SEP97	0	CSB Title III Design - FY97								
W3304042	01OCT96A	18OCT96A	01OCT96	18OCT96	0	Incorporate Impacts into Design								
W3304044	01OCT97	30SEP98	01OCT97	31MAR98	-127	CSB Title III Design - FY98								
W3304055	17DEC96A	04MAR97A	13DEC96*	28FEB97	-2	Implement Security Requirements, Design								
W3304060	12DEC96A	17JAN97A	13DEC96*	28FEB97	29	Facility Impacts 150 psig, Design								
W3304065	03FEB97A	28FEB97A	03FEB97*	28FEB97	0	High Pressure Inert Gas Line, Design								
W3304067	13JAN97A	18APR97A	13JAN97*	28FEB97	-35	MHM SASSI Analysis, Design								
W3304070	29MAY97A	15AUG97			0	MCO Drop Analyses & Tube Spacer Design								
W41000M2		09JUN99		26NOV97	-383			Accept Completed Work - CSB						
W41000M3		09JUN99		30APR98	-278			CSB Project Construction Closeout						

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	FY97FY98FY99FY00FY01FY02FY03FY04FY05										
W4101M2	20DEC96A		20DEC96*		0	CD3-CSB Deck Pour										
W4101M4	04APR97A			10MAR97	-18	CD3A-CSB Superstructure										
W4101M5	27AUG97		21APR97		-89	CD3B-CSB Systems Installation										
W4101M6	07AUG97		30MAY97*		-47	CD3C-CSB MHM Installation										
W4103010	08JUL97*	30SEP97	01MAY97*	30SEP97	0	CSB Impact Absorbers Prototype Design										
W4108011	01OCT97	24NOV97			0	CSB Impact Absorbers Prototype Fab										
W4201023	07NOV96A	30SEP97	01OCT96	30SEP97	0	Procure MHM Crane - FY97										
W4201028	01OCT96A	21JUL97	01OCT96	02JUL97	-11	Procure Receiving Crane										
W420102A	01OCT97	09JUN98			0	Procure MHM Crane - FY98										
W42010M2		05MAY98		30SEP97	-149	Complete GFE Procurement - CSB										
W4204010	16JUN97	14OCT97	10FEB97*	05AUG97	-49	Procure GFE - Receiving Area Tent & Hoist										
W4204020	24JUN97*	03JAN98	14APR97*	24JUL97	-114	Procure GFE - MCO Monitoring Carts										
W4204021	24JUN97	14NOV97			0	MCO Monitoring Cart Design										
W4204022	17NOV97	05MAY98			0	MCO Monitoring Cart Fabrication										
W4204023	17NOV97	09DEC97			0	Incorp. Cart Design in Process Flow Sheet										
W4204025	10DEC97	16DEC97			0	Perform Purge Cart Hazard Analysis										
W420402A	17NOV97*				0	Release for SC boundary Tube Vent & Purge Carts										
W4204030	26FEB97A	25JUN97	03FEB97*	07APR97	-56	Procure GFE - HVAC										
W4204032	27AUG97	26NOV97	21APR97	29AUG97	-62	Install HVAC/Mechanical										
W4204034	13JAN97A	05DEC97	09JAN97*	29AUG97	-67	CSB Electrical Installation										
W4204040	09JAN97A	29SEP97	09JAN97*	27MAY97	-86	Procure GFE - Electrical Distribution										
W4204060	12FEB97A	01AUG97	24MAR97	18JUL97	-10	Procure GFE - Health Protection System										
W4204070	11DEC96A	08SEP97	20JAN97*	04AUG97	-24	Procure GFE - Special Equipment										
W4204M1	24FEB97A		09JAN97*		-31	Start CSB GFE Fabrication										

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	
M45020510	04APR97A	15JUL97			0	CSB Procure/Install Security System
M45010M2		26MAR99		26NOV97	-331	CSB Construction (Equipment)
M45010PA		26NOV97		30SEP97*	-41	CSB Construction (Building)
M4502020	01OCT96A	13DEC96A	01OCT96	25NOV96	-12	Fabricate Embeds
M4502029	14JAN97A	18APR97A	03FEB97*	30APR97	8	Fabricate Safety and Tube Cover
M4502030	16SEP97	14OCT97	11APR97*	30SEP97	-10	Fabricate Plugs - FY97
M4502033	16SEP97	10FEB98	20DEC96	23MAY97	-178	Fabricate Tubes
M4502034	15OCT97	05MAR98	01OCT97	20JAN98	-31	Fabricate Plugs - FY98
M4502036	06MAR98	29MAY98	21JAN98	03MAR98	-62	Delivery of Plugs (FY98)
M4502037	09MAR98	02JUN98	21JAN98	17MAR98	-54	CSB Install Plugs (FY98)
M4502038	01OCT96A	26SEP97	01OCT96	30MAY97	-82	CSB Operating Deck
M4502039	20DEC96A	26SEP97	20DEC96	30MAY97	-82	CSB Operating Deck & Other Concrete Placements
M4502040	01OCT98*	19FEB99			0	Fabricate Plugs - FY99
M4502041	22FEB99	14MAY99			0	Delivery of Plugs (FY99)
M4502042	23FEB99	18MAY99			0	CSB Install Plugs (FY99)
M4502045	01OCT96A	27NOV96A	01OCT96	25OCT96	-23	Mobilization/Preparation
M4502048	09AUG96A	02JUN98	09AUG96	14JUL97	-223	CSB Cell 1-Concrete/Rebar/Embeds/Tubes/Plugs
M4502052	20AUG96A	21AUG97	20AUG96	10JUN97	-50	CSB Cell 2-Concrete/Rebar/Embeds
M4502054	09SEP96A	26SEP97	09SEP96	14JUL97	-53	CSB Cell 3-Concrete/Rebar/Embeds
M4502055	02JAN98	02JUN98	27MAR97	14JUL97	-223	CSB Install/Test Tubes
M4502056	30JAN97A	06JUN97A	14JAN97	14APR97	-38	CSB Above Deck Concrete Placement
M4502058	15NOV96A	04APR97A	15NOV96*	07MAR97	-20	CSB Receiving Area/Support Facility Concrete
M4502062	13JAN97A	05DEC97	23MAY97	29AUG97	-67	Install Electrical/Instrumentation/DCS/etc., Sys
M4502063	07NOV97*	15JAN98	02SEP97	26NOV97	-31	Electrical/Instrument/DCS/etc. Sys Accept Test

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
W4502064	15SEP97*	20SEP97	07JUL97	18JUL97	-50	Erect Receiving Crane
W4502066	30SEP97	20OCT97	21JUL97	29AUG97	-35	Receiving Crane ATP
W4502068	10NOV97	15JAN98	02SEP97	31OCT97	-49	Support CSB ATP
W450206B	27AUG97	26SEP97			0	Install Electrical Switchgear/Transformers
W4502070	15NOV96A	25JUL97	06DEC96	14APR97	-71	CSB Hot Conditioning Annex Rebar/Concrete
W4502071	17OCT96A	10DEC96A	18OCT96*	17DEC96	5	CSB Structural Steel Submittal
W4502072	11DEC96A	24OCT97	02JAN97	31JUL97	-60	CSB Support Building
W4502074	18FEB97A	04AUG97	02JAN97	09JUL97	-18	CSB Fab & Deliver Steel for Superstructure
W4502075	04APR97A	01OCT97	17MAR97	17JUL97	-53	CSB Vault Superstructure
W4502080	01OCT98*	26MAR99	01OCT97	31MAR98	-248	CSB Fabrication/Installation Impact Absorbers
W4502082	01OCT98	26FEB99			0	CSB Impact Absorbers Fabrication
W4502084	01MAR99	26MAR99			0	CSB Impact Absorbers Installation
W4502M1	16SEP97*		20DEC96		-184	DOE-RL Release CSB Tubes/Plugs for Fabrication
W4701005	16DEC96A	10FEB97A	16DEC96*	10FEB97	0	CSB Telecommunications Engineering
W4701010	11FEB97A	18APR97A	11FEB97	07APR97	-9	CSB Telecommunications Procurement
W4701015	21APR97A	27OCT97	08APR97	11JUL97	-75	CSB Telecommunications Construction
W520240	07AUG97	20AUG97			0	Reconcile CSB Final Design/Environmental Doc's
W520242	21AUG97	08JAN98			0	Revise CSB Permits for Final Design (if reqd)
W5202020	01OCT96A	03DEC96A	01OCT96	23DEC96	14	Prepare/Review/Comment Resolution CSB SAR
W5202023	01OCT96A	05NOV96A	01OCT96	05NOV96	0	Prepare CSB Operating Deck Safety Doc
W5202025	01OCT96A	03DEC96A	01OCT96	11NOV96	-14	Prepare CSB Superstructure Safety Doc
W5202028	04DEC96A	03APR97A	01OCT96	03DEC96	-83	DOE Review CSB SAR, Phase III
W5202034	13JAN97A	05MAR97A	13JAN97*	05MAR97	0	Prepare CSB Systems SAR
W5202036	06MAR97A	03JUN97A	06MAR97	18APR97	-31	DOE Review CSB Systems SAR

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
AW6202037	04JUN97A	01AUG97			0										CSB Comment Resolution Systems SAR
AW6202038	11MAR97A	02MAY97A	02JAN97	22JAN97	-71										Prepare CSB MHM SAR
AW6202039	04AUG97	27AUG97			0										DOE Review/Approve Systems SAR
AW6202040	05MAY97A	22MAY97A	23JAN97	24MAR97	-43										DOE Review CSB MHM SAR
AW6202041		27AUG97			0										CSB Systems SAR Approval
AW6202050	05MAY97A	21OCT97			0										Prepare Procurement Release Documentation
AW6202055	05MAY97A	20NOV97			0										Prepare Installation Release Documentation
AW6202057	08JAN98				0										Receive CSB FSAR Technical Data
AW6202058	02JUN97A	12DEC97			0										Prepare SAR Programatic Chapters (Ch. 7-17)
AW6202059	07OCT97	05JAN98			0										Final MCO SAR Analysis
AW6202060	08JAN98	19MAR98			0										Final Preparation CSB FSAR
AW6202063	08JAN98	19MAR98			0										Prepare Final CSB TSR's
AW6202075	20MAR98	29MAY98			0										Conduct CSB FSAR Internal Review
AW620280		29MAY98			0										CSB FSAR Submittal
AW620290	01JUN98	07JUL98			0										DOE Review CSB FSAR
AW620291	08JUL98	04AUG98			0										Respond CSB FSAR RCR's
AW620292	05AUG98	01SEP98			0										DOE Prepare CSB FSER
AW620295		01SEP98			0										CSB FSAR Approval
AW6202M1		05MAR97A		11NOV96	-76										Prepare CSB/HCA Superstructure Safety Doc
AW6202M2		02MAY97A		05NOV96	-122										Prepare CSB/HCA Operating Deck Safety Doc
AW6202M6		03APR97A		09JAN97	-59										SAR-CSB Superstructure Approval
AW6202M8	16JUN97*		25MAR97		-58										SAR-CSB MHM Approval
AW6202M9		19DEC96A		19DEC96	0										SAR-CSB Operating Deck Approval
AW6205M43	31OCT97	13NOV97			0										EA 43 (MCO/Tube Thermal Model) Closure

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
WS205M44		13NOV97			0				EA-43 (MCO/Tube Thermal Model) Closed						
WS205M45	31OCT97	13NOV97			0				EA 12 (Water Content/Reactions) Closure CSB						
WS205M46		13NOV97			0				Close CSB (Runaway Reactions) Closed EA-12						
WS205M60	18AUG97	15SEP97			0				DOE-RL Review MCO Drop Analyses						
WS205M61	16SEP97	29SEP97			0				Incorp. DOE-RL Comments into Analysis						
WS205M62	30SEP97	13OCT97			0				Incorporate into MCO Topical						
WS205M63	30SEP97	13OCT97			0				Close CSB EA 60 (MCO Drop)						
WS205M64		13OCT97			0				CSB EA-60 (MCO Drop) Closed						
WS205M65	17DEC97	02JAN98			0				EA063 (Purge Cart) Closure						
WS205M66		02JAN98			0				EA-63 (Purge Cart) Closed						
WS205M68	31OCT97	13NOV97			0				CSB EA 13 (CSB H2 Deflagration) Closure						
WS205M69		13NOV97			0				CSB EA-13 (CSB, H2 Deflagration)Closed						
WS205M70	07NOV97	13NOV97			0				CSB Upset/Recovery Procedures (EA-086)						
WS205M72	14NOV97	20NOV97			0				Integrate, Rev., Appr. Release Through Rupt. Dsk						
WS205M73	08SEP97	26SEP97			0				Finalize MCO Blowdown Model						
WS205M74	15JUL97*	05SEP97			0				Develop MCO Blowdown Model						
WS205M75	07NOV97	13NOV97			0				Integrate CSB EA 87 Package Inputs						
WS205M76	14NOV97	01DEC97			0				EA 87 (Release-Tube) Closure						
WS205M78	28AUG97	11SEP97			0				CSB EA-78 (Environmental Ops) Closure						
WS205M79		11SEP97			0				CSB EA-78 (Environmental Ops) Closed						
WS205M85	21NOV97	08DEC97			0				CSB EA-86 (Release-Rupture Disk) Closure						
WS205M86		08DEC97			0				CSB EA-86 (Release Rupture Disk) Closed						
WS205M87		01DEC97			0				CSB EA-87 (Release Tube) Closed						
WS205M91	07NOV97	20NOV97			0				Close (MCO Recovery Ops) EA 91						

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F
A6205M93		20NOV97			0
A6205M94	23DEC98	31DEC98			0
A6205M95	04JAN99	08JAN99			0
A6205M96		08JAN99			0
A6205M97	08DEC98	14DEC98			0
A6205M98	15DEC98	30DEC98			0
A6205M99		30DEC98			0
A62D02	06NOV96A	19DEC96A	06NOV96	19DEC96	0
A62D04	04DEC96A	03APR97A	12NOV96	09JAN97	-59
A6401020	01OCT96A	16OCT96A	01OCT96	16OCT96	0
A64010M1		16OCT96A		16OCT96	0
A6601020	25JUL96A	16DEC96A	25JUL96A	04DEC96	-8
A6601M3		16DEC96A		04DEC96	-8
WA8415		06AUG97			0
WA8415A	07AUG97				0
WA8416	07NOV96A	30SEP97	01OCT96	29AUG97	-21
WA8416A	01OCT97	09JUN98			0
WA8417		26JUN97*		06DEC96	-139
WA8418	07NOV96A	06AUG97	01OCT96	31DEC96	-151
WA8418A		06AUG97			0
WA8419		06AUG97		31DEC96	-151
WA8421	15DEC97	06AUG98	02SEP97	31OCT97	-190
WA8426	07AUG98	01SEP98	03NOV97	26NOV97	-190
WA8427	02SEP98	16SEP98			0

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF
A8442	07NOV96A	30SEP97			0
A8450	02SEP97*	09DEC97			0
A8461	02SEP97*	13FEB98			0
A8463	17FEB98	23FEB98			0
A8464	24FEB98	04MAY98			0
A8464A		04MAY98			0
A8466	05MAY98	09JUN98			0
A8466A		09JUN98			0
A8470	27NOV96A	02JUN97A			0
A8472	03JUN97A	21AUG97			0
A8474	22AUG97	27AUG97			0
A8480	05FEB97A	24JUN97			0
A8482	03JUN97A	26SEP97			0
A8484	29SEP97	02OCT97			0
<b>DEL CONDITIONING PROCESS 1.4-1.08</b>					
A04B10	23JUL99*	18FEB00	21NOV97*	22JUN98	-416
A04B14	22FEB00	20MAR00	17NOV98	16DEC98	-314
A04B24	21MAR00	30MAY00	17DEC98	18JAN99	-344
A04B26	07MAR00	30MAY00	28MAY98*	21AUG98	-444
A04B30	31MAY00	06JUN00	19JAN99	25JAN99	-344
A04B31		06JUN00		25JAN99	-344
A04B36	07JUN00	06JUL00	26JAN99	23FEB99	-344
A04B40		06JUL00		23FEB99	-344
A04B45	07JUL00	03AUG00	24FEB99	23MAR99	-344
A04B47	04AUG00		24MAR99		-344

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
W04B00		15NOV00		23MAR99	-417	
W04C10	01OCT98	30JUN99	01OCT97*	30JUN98	-251	
W04C12	01APR99	30JUN99	01APR98*	30JUN98	-251	
W04C14	01JUL99	01NOV99	01JUL98*	30OCT98	-251	
W04C20	16NOV00	15NOV02	24MAR99	22MAR01	-417	
W04C25		15NOV02		22MAR01	-417	
W1103A10	01OCT96A	25APR97A	01OCT96*	25APR97	0	Hot Conditioning Functions/Requirements Doc-FY97
W1103C10	01OCT96A	30SEP97	01OCT96	25APR97	-108	Interface Trade Studies - FY97
W1103G10	01OCT96A	19JUN97	01OCT96	25APR97	-38	TAG Support for Alternative Evaluations - FY97
W1302A00	01OCT99	27SEP00			0	Hot Conditioning System Project Management FY00
W1302A08		25JAN99		14NOV97	-296	CD3C-HCS Process Equipment Installation
W1302A09		14FEB97A		10FEB97*	-4	CD3A-HCS Annex Const Approval
W1302A14		30DEC98		30APR97*	-417	CD3D-HCS Process Equip Procurement Appr
W1302A29		15NOV00		23MAR99	-417	CD4-HCS Operations
W1302B01	01OCT97	21NOV97			0	HCS Assessment Report Preparation
W1302B10		21NOV97			0	Issue Draft Assessment Report
W1302B20	24NOV97	16JAN98			0	Review & Incorporate Comments
W1302B30		30JAN98			0	Issue Recommendation LTR to DOE-RL
W1401B02	01OCT96A	05SEP97	01OCT96	07APR97	-105	HCS Process Equipment Definitive Design - FY97
W1401B03		17DEC96A		17DEC96*	0	HCS 60% Design Review Presentation
W1401B05		18FEB97A		18FEB97*	0	Issue HCS 90% Design Review Package
W1401B06		08APR97A		03MAR97	-26	Perform HCS 90% Design Review
W1401B10	01OCT98	30SEP99			0	HCS Title II Design FY99
W1401B19		05SEP97		07APR97*	-105	Cmpl HCS Design

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
1401C00	01OCT96A	30SEP97	01OCT96	31JUL97	-42	HCS Proc Equip Dsn Validation Test Prog-FY97Susp								
1401C0A	01OCT98	17AUG99			0	HCS Proc Equip Dsn Validation Test Prog-FY98								
1401C10	01OCT96A	13JUN97	01OCT96	06FEB97	-89	HCS Testing Phase I & II Procd Suspended FY98								
1401C11	01OCT98	08FEB99			0	HCS Testing Phase I & II Procd FY99								
1401C20	04NOV96A	01APR97A	04NOV96*	17MAR97	-11	HCS Testing Phase I								
1401C30	09FEB99	26MAY99	07FEB97	31JUL97	-457	HCS Testing Phase II & Report								
1402A02	01OCT95A	18OCT96A	01OCT96	18OCT96	0	HCS/CSE Annex Design - FY97								
1402A40	01OCT98	22OCT98	29JAN98	20FEB98	-170	HCS Design/Operation Evaluation KW								
1402A42	01OCT98	08OCT99			0	HCS Design Update - SAR/Testing								
1402A45	01OCT98*	16NOV98	28JAN97*	14MAR97	-422	HCS Design/Operation Evaluation 2nd KW/KE								
1501A10	08DEC98	08FEB99	21MAY97	30SEP97	-339	HCS Title III Constructn Engrg-Process Equip FY97								
1501A12	09FEB99	08FEB00	01OCT97	30SEP98	-339	HCS Title III Constrtn Engrg-Process Equip-FY98								
1501A14	09FEB00	27MAR00	01OCT98	16NOV98	-339	HCS Title III Constrtn Engrg-Process Equip-FY99								
1501B02	01OCT98	07DEC98	04MAR97	20MAY97	-388	HCS Special Equip/Process Sys LL Procmt Pkg Prep								
1501B05	18AUG99	04JAN00	01OCT97	30SEP98	-314	HCS Special Equip/Process Syst Lng Lead Procmt 98								
1501B06	17JUN99	17AUG99	20MAY97	30SEP97	-471	HCS Special Equip/Process Syst Bid Cycle FY97								
1501B07	18AUG99	04JAN00	01OCT97	30SEP98	-314	HCS Special Equip/Process Syst Fab FY98								
1501B08	26JAN99		17NOV97		-296	Start HCS Process Equipment Installation								
1501B12	08SEP99	04JAN00	17NOV97	30SEP98	-314	HCS Special Equip/Process Syst Install FY98								
1501B13	05JAN00	18FEB00	01OCT98	16NOV98	-314	HCS Special Equip/Process Syst Install FY99								
1501B15		18FEB00		16NOV98	-314	Cmpl HCS Process Equip Installation								
1501B20	16JUN97	29AUG97			0	Process Control Sys Design								
1501B25	16JUN97	05SEP97			0	Process Gas Monitoring/SC I&C Design								
1501B30	31DEC98	21JUN99			0	Process Equipment Procurement								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var. E F		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W1501B35	22JUN99	29SEP99			0					Acceptance Tests - CATand PAT					
W1501B50		29SEP99			0					Hand Off to Startup/ORR					
W1501C07	14FEB97A	25JUL97	11FEB97	07MAY97	-54		HCS Annex Substructure Construction (CSB)								
W1501C40		26MAR99		26NOV97*	-331					Canister Storage Building Construction Complete					
W1602B09		03AUG00		23MAR99	-344					Complete HCS Process Operational Readiness Revw.					
W1700A34	01OCT96A	31JAN97A	01OCT96	07FEB97	5		Prepare, Review & Approve EPA Air Permit-FY97								
W1700A35	01OCT96A	12DEC96A	01OCT96	12DEC96	0		EPA Air Permit NOC FDH & DOE-RL Review								
W1700A36	21NOV96A	25NOV96A	21NOV96*	25NOV96	0		EPA Air Permit DOE-RL Review								
W1700A37	13DEC96A	31JAN97A	13DEC96	10FEB97	6		EPA Air Permit NOC EPA Review (60 cal days)								
W1700A39		31JAN97A		10FEB97	6		Cmp EPA Air Permit NOC Approved								
W1700A40	01APR96A	03OCT96A	01APR96	03OCT96	0		Review & Appr Ecology Phase I Air Permits								
W1700A49		03OCT96A		03OCT96	0		Phase I Ecology Air Permit Approved								
W1700A50	17DEC96A	30SEP97	19FEB97*	30SEP97	0		Prep, Revw & Appr Ecology Phse II Air Permts-FY97								
W1700A54	01OCT98	25JAN99	01OCT97	14NOV97	-296					Prep, Revw & Appr Ecology Phse II Air Permts-FY98					
W1700A55	01OCT98*	29OCT98	09JUN97*	09JUL97	-330					Ecology Phse II Air Permts DOE-RL Review					
W1700A59		25JAN99		14NOV97	-296					Phase II Ecology Air Permit Approved					
W1700A70	17DEC96A	30SEP97	19FEB97*	30SEP97	0		Prep, Revw & Apprv DOH Phase II Air Permits-FY97								
W1700A72	16DEC98	05JAN99	01OCT97*	28OCT97	-295					Prep, Revw & Apprv DOH Phase II Air Permits-FY98					
W1700A80	17DEC96A	15AUG97	19FEB97*	21JUL97	-19		DOH Phase II Air Permit FDH & DOE Review								
W1700A82	01OCT98*	29OCT98	19JUN97*	21JUL97	-322					DOH Phase II Air Permit DOE-RL Review					
W1700A85	30OCT98	05JAN99	22JUL97	19SEP97	-322					DOH Phase II Air Permit Review & Apprv (60 Cal)					
W1700A89		05JAN99		28OCT97	-295					Phase II DOH Air Permit Approved					
W1700A95	30JUL98*	29JUL99	10JAN97*	09JAN98	-390					HCS Baseline Rad Preoperational Monitoring					
W1701C13	01APR96A	06NOV96A	01APR96	06NOV96	0		HCS SAR for Construction Authorization								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
W1701C16	07NOV96A	02DEC96A	07NOV96	03DEC96	1	DOE Rev HCS SAR for Deck Constructn Authorization
W1701C18		02DEC96A		03DEC96	1	HCS SAR Deck Approval
W1701C19	04DEC96A	30SEP97	04DEC96	30APR97	-105	SAR-HCS Prep Phase 2 (For Equipmnt Fab) Susp FY98
W1701C20	01OCT98	29DEC98			0	Prepare HCS Systems SAR
W1701C21	30DEC98	15MAR99			0	Internal Review HCS Systems
W1701C22	16MAR99	19APR99			0	DOE Review HCS Systems
W1701C23	01DEC98	30DEC98	01MAY97	30JUN97	-375	Resolve RCR's HCS SAR Phase 2 (For Equip Fab)
W1701C24	20APR99	17MAY99			0	DOE Prepare HCS Phase 2 FSER
W1701C25		30DEC98		30JUN97	-375	HCS SAR Process Equipment Approval
W1701C30	18MAY99	29JUL99	01JUL97	01JUL98	-269	Prepare HCS Final SAR
W1701C34		14OCT98			0	Receive HCS FSAR Last Technical Data
W1701C36	30JUL99	08OCT99			0	Perform HCS Final SAR Internal Review
W1701C38	11OCT99	14JAN00			0	DOE Review Final HCS SAR
W1701C40		14JAN00		01APR98*	-448	Final HCS SAR DOE Approval
W1701C46		08OCT99		01JUL98	-319	SAR-HCS Final Submittal
W1701CA9	01OCT98	30NOV98			0	SAR-HCS Prep Phase 2 (For Equipmnt Fab) FY99
W1701E10		28OCT98			0	HCS EA-29 Closed
W1701E20	15OCT98	28OCT98			0	HCS EA 29 Closure
W1701E30	01OCT98	14OCT98			0	Rerun Thermal Analyses with new data
W1701E40		13FEB98			0	HCS EA-92 (Equipment Loads) Closed
W1701E50	02FEB98	13FEB98			0	HCS EA-92 Closure
W1701F00	23AUG96A	29OCT96A	23AUG96	29OCT96	0	Hot Vacuum Conditioning NEPA Activities
W1701G04	01OCT98	01DEC98	01OCT96	31DEC96	-482	HCS Criticality Studies - FY97
BASINS GOLD VAC DRYING ACQUISITION 1.4.1.08.0						
W1701A10	10OCT96A	30SEP97	01OCT96	30SEP97	0	Facilitate CVD Startup/Construction

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F
W04A10A	03MAR97A	05SEP97	03MAR97	30JUN97	-46
W04A10B	08SEP97*	05DEC97	01JUL97	30SEP97	-46
W04A10C	01OCT97*	11JUN98	01JUL97	30SEP97	-175
W04B12	18MAR98		14AUG97*		-147
W04B12A		03SEP98			0
W04B12D	26JUN98	03SEP98			0
W04B12D1	26JUN98	03SEP98			0
W04B14	04SEP98	01DEC98	16SEP97*	29OCT97	-272
W04B141	04SEP98	01DEC98			0
W04B15	08JAN99	19APR99	07OCT97	12DEC97	-337
W04B15D	28SEP98	20OCT98			0
W04B17	30JUL99	27OCT99	20MAY98*	19AUG98	-299
W04B19A		04JUN98			0
W04B19B		18AUG98			0
W04B19D	10MAR97A	05SEP97	10MAR97	18APR97	-96
W04B19DB	01OCT97*	30SEP98			0
W04B19GD	04NOV98	17DEC98			0
W04B19GF	02DEC98	24FEB99			0
W04B19J	17SEP98	01DEC98	02DEC97	09FEB98	-204
W04B19K		01DEC98		09FEB98	-204
W04B19M	04NOV98	17FEB99			0
W04B20D	16JUN97*	05SEP97	01APR97*	09MAY97	-81
W04B20E	08SEP97	25SEP97	27MAY97*	13JUN97	-71
W04B20F	26SEP97	18NOV97	16JUN97	08AUG97	-71

FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
Prepare CVD Preop Test Specifications								
Prepare CVD Preop Test Procedures								
Prepare for CVD Preop Testing								
Receive First CVD Sys Turnover to S/U								
Receive CVD Facility/VPS Systems								
Perform CVD Facility/VPS Pre Op Test PAT								
Perform CVD Facility/VPS Pre Op Test Ph 1 Repair								
Perform CVD VPS Pre Op Testing PAT								
Perform CVD VPS Pre Op Eqpt Repair								
Perform CVD Ops Testing Dry Runs								
Obtain Ops Access to CVD Facility								
Perform CVD Post SU Validation Testing								
Receive CVD Procedures SAR Input								
Receive CVD Procedures Last Vendor Data								
CVD Procedures Draft Rev A								
Prepare CVD Procedures - FY98								
CVD Procedures Review 100K SAR								
CVD Rev 1 Procedures from 100K SAR								
CVD Procedures Draft Rev 0								
CVD Procedures Under Change Control								
CVD SAR Impl-Test Certs, Config Mgmt, etc								
CVD Training Job Task Analysis								
CVD Training Design								
CVD Training Materials Development								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var. E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
A04B20G	01JUN98*	25AUG98	01OCT97*	10NOV97	-197			Update CVD Training Materials						
A04B20GA	04SEP98	07JAN99			0			Staff/Train CVD BU Staff						
A04B20GD	16NOV98	15DEC98			0			CVD Operators Classroom Training						
A04B20GF	16DEC98	15JAN99			0			Perform CVD Operators OJT						
A04B20J		19APR99		12NOV97	-357			CVD Chiefs Certified						
A04B20K	08JAN99	19APR99	13NOV97	12DEC97	-337			CVD Operators JPM						
A04B20N		19APR99		12DEC97	-337			CVD Other Ops Certified						
A04B20ND	10FEB99	24MAR99			0			Update CVD Operator Training from FSER						
A04B20P	08JUL98	07JAN99			0			Staff/Train CVD Mgmt/Tech Staff						
A04B24	30DEC98	19APR99	08OCT97	02MAR98	-285			Prepare CVD MSA Affidavits						
A04B24D	25MAR99	07APR99			0			MSA Confirmation of CVD SAR Implement						
A04C10	10OCT96A	30SEP97	01OCT96*	30SEP97	0	Perform CVD Staffing/Training/Readiness Prep								
A04C11	30JUL99		01JUN98		-292			Start CVD Operation						
A04C18	30JUL99	28APR00	01JUN98	03MAR99	-292			CVD Process Operation of Facility FY 98						
A04C20	01MAY00	31JUL01	04MAR99	28JUL00	-252			CVD Process Operation of Facility FY 99/00						
A04C25		31JUL01		28JUL00	-252			Complete CVD Fuel Relocation Ops						
A3301A95		24APR97A			0	CD3A-CVD Const Approval								
A3301A96		01DEC98			0			Complete CVD Construction (All Equipment)						
A3301A98		01DEC98			0			CVD OAC 1 & 2 - Construction & Testing Complete						
A3301C99		08JUN99			0			CVD OAC 3 - Indep Contr Fuel Relocatn ORR Cmplt						
A0401B04	01OCT97	30JAN98			0	CVD Definitive Design - FY 98								
A0401B14	03MAR98*				0	CVD Complete Highlight Reports								
A0401B16	03MAR98	30MAR98			0	CVD Highlight Rpt Reconciliation/Dsn Confirmatn								
A0401B19		12JAN98		31JAN97	-236	Complt Definitive Design Rprt for the CVD System								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W3401B20	01OCT97*	30JAN98			0		CVD Formal Design Review - FY 98							
W3401B22	16JUN97*	30OCT97			0		CVD Process Equipment Design/Final Dsn Reww Prep							
W3401B27	31OCT97	03NOV97			0		CVD Conduct Design Review Meeting							
W3401B29	04NOV97	12JAN98			0		CVD Final Design Resolutions and Approval							
W3401B30	01OCT96A	04APR97A	01OCT96*	21APR97	11		CVD Prototype Procd/Fab and Equipment Testing							
W3401B32		12JAN98			0		CVD Complete Final Dsn (Procurement Approval)							
W3401B33	25APR97A	16JUL98			0		CVD Therm! Analysis & Issue Final Rpt							
W3401B50	26JUN97*	30JUN98			0		CVD Characterization Prelim Data & Thermal Model							
W3401B70	16JUN97	27JUN97			0		CVD & Nuclear Safety Review Thermal Model							
W3401B85	16JUN97	17JUL97			0		CVD Therm! Analysis Review & Final Report							
W3501A02	01OCT96A	30SEP97	01OCT96	30SEP97	0		CVD Construction Title III Engineering - FY 97							
W3501A05	01OCT97	30SEP98	01OCT97	31MAR98	-127		CVD Construction Title III Engineering - FY 98							
W3501A06	01OCT98	30SEP99			0		CVD Construction Title III Engineering - FY 99							
W3501A10	01OCT97	30SEP98			0		CVD Construction Title III Inspection - FY 98							
W3501A11	01OCT98	30SEP99			0		CVD Construction Title III Inspection - FY 99							
W3501B09	11FEB98		27JUN97*		-155		CD38-CVD Equipment Installation Approval							
W3501B10		12JAN98			0		CVD Procuremnt Approval-Design Review							
W3501C03	01AUG96A	10JAN97A	01AUG96	20JAN97	6		CVD Procuremnt Bid Process							
W3501C04	12SEP97	15JUN98			0		CVD 1st Article Mock up 306 Bldng Testing							
W3501C05		10JAN97A		20JAN97	6		CVD Procrmnt Bid Process Issue Notice to Proceed							
W3501C06	01OCT97*	15JUN98			0		CVD Design Testing (First Article Mockup)- FY 98							
W3501C07	16JUN97*	23FEB98			0		CVD 1st Article Mockup Hood Dsn, Fab&Del to 306							
W3501C08	01OCT97*	15JUN98			0		CVD Design Validation FY 98							
W3501C09		15JUN98			0		CVD Design Complete (PA Milestone)							

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W3501C10	10JAN97A	21FEB97A	20JAN97	31JAN97	-14		CVD Submittals								
W3501C12	10JAN97A	31JAN97A	20JAN97	31JAN97	0		CVD Mobilize Project								
W3501C14	10FEB98	15JUN98	30JAN97*	05SEP97	-194		CVD Vacuum Process Sys (VPS)- Fab2,3&4 - FY 98								
W3501C15	16JUN98	18AUG98	01OCT97*	17MAR98	-107		CVD All Process Equipment Installation - FY 98								
W3501C16	16MAY97A		03FEB97		-73		CVD Approval to Pour Concrete								
W3501C17	21JAN97A	17MAR98	03FEB97	13MAY97	-210		CVD Construction Site Work (Office Area)								
W3501C18		01DEC98		17MAR98	-179		Cmplt CVD Construction and Accept Testing								
W3501C20	10FEB97A	17MAR98	10FEB97*	14MAR97	-252		CVD Constructn Process Bay Areas - 1 Through 5								
W3501C23	08APR97A	18NOV97			0		CVD Pre-Cast Panels Dsn Rev/Apprl, Fab & Deliver								
W3501C28	20JUN97*		01MAY97*		-35		Approval to Start CVD HVAC Installatn (Permits)								
W3501C45	01APR97A	17MAR98	04MAR97	31JUL97	-156		CVD Construction Control Room								
W3501C52	12MAR97A	17MAR98	14MAR97	18JUL97	-165		CVD Const Mech Tunnel (Transfer Corridor)								
W3501C58	24APR97A	03SEP97	26MAR97	07JUL97	-44		CVD Const Water Tank Room								
W3501C65	13JAN98	15APR98			0		CVD Process Water Conditioning Sys Procmt FY98								
W3501C70	04SEP98	01DEC98			0		CVD GFE Process Equipment PAT								
W3501C71	13MAR98	15JUN98			0		CVD Process Hood System (2, 3 & 4) Procmt FY98								
W3501C76	13JAN98	10MAR98			0		CVD Safety Class Instrumentation Procuremnt FY98								
W3501C78	13JAN98	15APR98			0		CVD Monitoring & Control System Procurement FY98								
W3501C79		03SEP98			0		CVD Facility Constructn Cmplt (No Process Equip)								
W3501C80	26JUN98	03SEP98	24JUL97*	30SEP97	-233		CVD Facility PAT (Pre Op Accept Tests)								
W3501C81	13JAN98	10MAR98			0		CVD Ion Exchange Module Procurement - FY 98								
W3501C82		17MAR98			0		CVD Facility Construction (Grant) Complete								
W3501C83		06MAR98*			0		CVD Construction Ready for Process Equipment								
W3501C84	13JAN98	15APR98			0		CVD Special Tools Procurement - FY 98								

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	
W3701C85		15JUN98		30SEP97*	-177	
W3701C87	13JAN98	15APR98			0	
W3701C90		01DEC98			0	
W3701C95	16JUN98*	03SEP98			0	
W3701A00	01OCT96A	10JAN97A	01OCT96*	27JAN97	11	Prepare, Review & Approve EPA Air Permit
W3701A05	12NOV96A	27NOV96A	12NOV96*	20NOV96	-5	EPA Air Permit DOE Review
W3701A09		10JAN97A		27JAN97	11	Complete CVD EPA Air Permit NOC Approval
W3701A12	01OCT96A	31OCT96A	01OCT96*	31OCT96	0	Prep, Review & Appr Ecology Phase I Air Permit
W3701A19		31OCT96A		31OCT96	0	Complete CVD Phase I Ecology Air Permit Approval
W3701A22	01OCT96A	07MAR97A	01OCT96*	11MAR97	21	Prep, Review & Appr Ecology Phase II Air Permit
W3701A24	20DEC96A	17JAN97A	02DEC96*	31DEC96	-12	Ecology Phase II Air Permit DOE Review
W3701A29		07MAR97A		11MAR97	2	Complete CVD Phase II Ecology Air Permit Approval
W3701A32	01OCT96A	31OCT96A	01OCT96*	31OCT96	0	Prep, Review & Appr DOH Phase I Air Permit
W3701A39		31OCT96A		31OCT96	0	Complete CVD Phase I DOH Air Permit Approval
W3701A42	01OCT96A	19JUN97	01OCT96*	08APR97	-51	Prep, Review & Appr DOH Phase II Air Permit
W3701A44	28MAR97A	19JUN97	02DEC96*	31DEC96	-119	DOH Phase II Air Permit DOE Review
W3701A49		19JUN97		08APR97	-51	Complete CVD Phase II DOH Air Permit Approval
W3701A55	01OCT96A	30SEP97	01OCT96*	30SEP97	0	CVD Air Permitting - FY 97
W3701A56	13JAN98	26JAN98			0	Reconcile CVD Final Design/Environ Docmnts
W3701A57	27JAN98	10JUN98			0	Revise CVD Permits for Final Design (if reqd)
W3701A60	31MAR97A	31MAR97A	21JAN97	08APR97	6	CVD Eagle Watch Plan
W3701A70	16JUN97	07JUL97	07JAN97*	18FEB97	-96	CVD Sanitary Water Permit Prep
W3701A72	08JUL97*	04AUG97	19FEB97	18MAR97	-96	CVD Sanitary Water Permit DOE Review/Approv
W3701A75	05AUG97*	30SEP97	19MAR97	13MAY97	-96	CVD Sanitary Water Permit DOH Review/Approv/Issue

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W3701A85		30SEP97		13MAY97	-96									
W3701B05		06OCT97			0									
W3701B24	07OCT97	20OCT97			0									
W3701B26		20OCT97			0									
W3701B30	13JUN97A	06OCT97			0									
W3701B34	07OCT97	20OCT97			0									
W3701B36	21OCT97	03NOV97			0									
W3701B38		03NOV97			0									
W3701B42	06OCT98	12OCT98			0									
W3701B47	13OCT98	19OCT98			0									
W3701B50		19OCT98			0									
W3701B52	06OCT98	12OCT98			0									
W3701B57	13OCT98	19OCT98			0									
W3701B60		19OCT98			0									
W3701C20	03SEP96A	24JAN97A	03SEP96	10JAN97	-10	DOE-RL Rev CVD SAR Constrn Auth Pkg (Phase I)								
W3701C29		24JAN97A		10JAN97	-10	CVD SAR Civil/Struct Approval								
W3701C30	02DEC96A	24JAN97A	02DEC96*	28FEB97	24	SAR-CVD Const Authorization								
W3701C35	03FEB97A	11DEC97			0	Prepare CVD Phase 2 SAR								
W3701C36		30SEP97*			0	Issue Equivalent System Design Document Pkg								
W3701C40	02DEC96A	24JAN97A	02DEC96*	28FEB97	24	Prepare/Review Remaining CVD SAR Chapters								
W3701C48	12DEC97	10FEB98			0	Conduct CVD Phase 2 SAR Internal Reviews								
W3701C54		10FEB98			0	Submit CVD Phase 2 SAR to DOE								
W3701C55	11FEB98	15APR98	01FEB97	31MAR97	-262	DOE-RL Rev CVD Phase 2 SAR								
W3701C59		15APR98		31MAR97	-262	CVD SAR (Phase 2) Approval								

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
W3701C78		13JAN98			0										
W3701C84	14JAN98	25MAR98			0										
W3701C90	26MAR98	04JUN98			0										
W3701C92		04JUN98			0										
W3701G01	01OCT96A	30SEP97	01OCT96*	30SEP97	0										
URIAL GROUNDS 1.4.1.09.01.02															
WA10102	01OCT97*	01APR98	01OCT97*	01APR98	0										
WA101150		01APR98		01APR98	0										
WA2000A	02APR98	25JUN01			0										
- PLANT 1.4.1.09.01.03															
WA103	01OCT96A	02JUN97A	01OCT96	30APR97	-22										
WA10300	03JUN97A	08JUL97	01MAY97	03JUN97	-23										
WA10301	12DEC96A	02JUN97A	12DEC96*	25APR97	-25										
WA10302	09JUL97*	02OCT97	07JUL97*	30SEP97	-2										
WA10303	13JAN97A	27JUN97	13JAN97*	30MAY97	-20										
WA10304	23JUN97	15JUL97	23MAY97	13JUN97	-20										
WA10305	16JUL97	08AUG97	16JUN97	11JUL97	-20										
WA10306	16JUL97	08AUG97	16JUN97	11JUL97	-20										
WA10307	31JUL97	25AUG97	16JUN97	11JUL97	-31										
WA10308	27MAY97A	10JUN97A	07APR97*	21APR97	-35										
WA10309	11JUN97A	30JUL97	28APR97*	13JUN97	-31										
WA1031	24FEB97A	15JUL97	03MAR97	27JUN97	-10										
WA10310	16JUL97	30SEP97	30JUN97	30SEP97	0										
WA1032	01OCT96A	30SEP97	01OCT96	30SEP97	0										
WA1033	04NOV96A	30SEP97	04NOV96	30SEP97	0										

Obtain CVD FSAR Last Technical Data

Prepare CVD Final SAR Input

Perform CVD FSAR Chpts 2-6 Internal Reviews

CVD FSAR Chpts 2-6 Complete

Cold Vacuum Drying Criticality Studies - FY 97

Eval Burial Ground Fuel Path/Interface Agreement

Complete Evaluation LLBG SNF Move

Maintain Tech Interface with LLBG

Draft PWR Core 2 SNF Canister Prfrmnce Specificctn

Review & Finalize T-Plant Canister Spec

Review Initial PWR Core 2 SNF Performance Spec

Input & Review Update to T-Plant Perf Spec

Provide Reactor Pwr History & Matr'l Spec's

ORIGEN Eng for High Burn-Up PWR Core 2

Shielding Evaluation at CSB Vault

Shielding Evaluation for Transport

Thermal Evaluation at CSB Vault

Issue MOU as SD

Assess Conformance to Cladding Temp Limits

Draft Fuel Preparation & Drying Specification

Review & Finalize Fuel Prep & Drying Spec

T-Plant SAR & Procedure Input

Process Flow Diagrams for SNF

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
WA103A	01OCT97	30SEP98	01OCT97	30SEP98	0				Maintain Tech Interface w/ PWR Core 2 SNF (FY98)					
WA301	01OCT98	30SEP99	01OCT98	30SEP99	0				Acquire/Manage PWR Core 2 SNF Move to CSB (FY99)					
WA301A	01OCT99	29SEP00	01OCT99	29SEP00	0				Acquire/Manage PWR Core 2 SNF Move to CSB(FY00)					
WA301B	02OCT00	28SEP01	02OCT00	28SEP01	0				Acquire/Manage PWR Core 2 SNF Move to CSB(FY01)					
WA305	01OCT98	30SEP99	01OCT98	30SEP99	0				Prep PWR Core 2 SNF Move Compli/Readiness(FY99)					
WA305A	01OCT99	29SEP00	01OCT99	29SEP00	0				Prep PWR Core 2 SNF Move Compli/Readiness(FY00)					
WA305B	02OCT00	28SEP01			0				Prep PWR Core 2 SNF Move Compli/Readiness (FY01)					
WA310	01OCT98	30SEP99	01OCT98	30SEP99	0				Acquire PWR Core 2 SNF Canister & Equipmnt(FY99)					
WA310A	01OCT99	29SEP00	01OCT99	03APR00	-125				Acquire PWR Core 2 SNF Canister & Equipmnt(FY00)					
WA310B	02OCT00*	01AUG01			0				Acquire PWR Core 2 SNF Canister & Equipmnt(FY01)					
WA320		29MAY01		03APR00	-290				Receive PWR Core 2 SNF Canisters					
WA501	03OCT01	14FEB02	02OCT00	02JAN01	-282				Transfer PWR Core 2 SNF to CSB					
WA501M	03OCT01		02OCT00		-252				Start Transfer of PWR Core 2 SNF to CSB					
WA705	15FEB02	23SEP02	03JAN01	28SEP01	-246				Store PWR Core 2 SNF at Canister Storage Bldg					
VL LABS BUILDINGS 324,325,327 1.4.1.09.01.04														
WA1001	30DEC96A	30SEP97	30DEC96	30SEP97	0				Complete Site Wide SNF Management Plan					
WA10010		30SEP97		30SEP97	0				Complete Other SNF Fuel PMP					
WA100101	01OCT96A	25APR97A	01OCT96	31MAR97	-19				Prep& Issue Non-Defense Production EA					
WA100102	16JUN97*	31JUL97	16JUN97*	31JUL97	0				Site Wide SNF Level '0' PFD					
WA101102	01OCT97*	30SEP98	01OCT97*	30SEP98	0				Evaluate Other SNF Path Forward (FY96 Deferred)					
WA1022	02SEP97*	30SEP97	02SEP97*	30SEP97	0				Compl LWR Fuel Move Documentation					
WA10221	06JAN97A	09JUN97A	06JAN97*	23APR97	-32				Welded/Bolted Closure Evaluation					
WA10222	02JUN97A	30SEP97	02JUN97*	30SEP97	0				SPR SNF Scoping					
WA10223	01OCT96A	15NOV96A	01OCT96	15NOV96	0				Pre-Hold Safety Analysis Review					
WA10224	02SEP97*	30SEP97	02SEP97*	30SEP97	0				Review/Accept NAC-1 Cask Documentation					

Activity ID	Early Start	Early Finish	TA11 E S	TA11 E F	Var E F		FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
AWA10225	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10226	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10227	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10228	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10229	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10230	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10231	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
AWA10232	05FEB97A	09JUN97A	05FEB97*	23APR97	-32										
AWA10233	02SEP97*	30SEP97	02SEP97*	30SEP97	0										
08 BLDG ANNEX 1.4.1.09.01.05															
WV103	01OCT96A	27MAY97A	01OCT96	28MAR97	-41										
WV1032	27MAY97A	10JUL97	14FEB97	28MAR97	-71										
WV1034	31MAR97A	30SEP97	31MAR97	30SEP97	0										
WV1036	31MAR97A	30SEP97	31MAR97	30SEP97	0										
WV1038	02SEP97	30SEP97	02SEP97	30SEP97	0										
WV105	01OCT97	30SEP98	01OCT97	30SEP98	0										
WV107	01OCT98	30SEP99	01OCT98	30SEP99	0										
WV109	01OCT99	30MAR00	01OCT99	30MAR00	0										
WV20102	01OCT96A	27NOV96A	01OCT96	27NOV96	0										
WV20104	01OCT96A	27NOV96A	01OCT96	27NOV96	0										
WV20106	02JAN97A	13JUN97A	02JAN97*	31MAR97	-53										
WV20108	27MAY97A	30SEP97	01APR97	30SEP97	0										
11 1.4.1.09.01.06															
WV10102	01OCT96A	30JUN97	01OCT96	30APR97	-42										
WV10104	02JUN97A	30SEP97	02JUN97*	30SEP97	0										

Review NAC-1 Cask Design Mod's

Review PWR Canister Design/Analysis

Miscellaneous LWR SNF Packaging Evaluation

Post-Hold Safety Analysis Report Review

BWR Safety Analysis Review

NAC-1 SARP Review/Comment Resolution

FY97 Readiness Support for Transport/Storage

NAC-1 Storage Alternative Evaluation

Review SNF Washing/Loading/Drying Procedures

Procedure Prep & Apprvl of Annual Inspect/Surv

Annual Inspect/Surveillance of 400 Area TRIGA SNF

General FFTF Plant Surveillance/Support

FFTF Cognizant Eng Oversight of NRF TRIGA SNF

FMEF Equipment Storage

Maintain 308 Fuel at 400 Area ISA (FY98)

Maintain NRF TRIGA SNF at 400 Area ISA (FY99)

Maintain NRF TRIGA SNF at 400 Area ISA (FY00)

Cultural Resources Review

Biological Review





















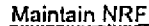



Fuel Classification Input to DOE-RL

Fuel Classification Resolution

Establish Misc FFTF Packaging Requirements

Resolve Safety Basis Issues

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var E-F	
WA10105	04NOV96A	30SEP97	04NOV96	30SEP97	0	Resolve Technical Issues - NCR's
WA10130	30JUN97	30SEP97	30JUN97	30SEP97	0	Maintain Tech Interface w/FFTF, 4th Qtr FY97
WA10132	30JUN97	30SEP97	30JUN97	30SEP97	0	FFTF SNF PFD
WA10134	30JUN97	30SEP97	30JUN97	30SEP97	0	Transloading Equipment List
WA301105	01OCT99*	30JUN00	01OCT99*	30JUN00	0	Update T-3 Cask License Phase-1 -FY00
WA301110	03APR00	29SEP00	03APR00	29SEP00	0	Relocat/Instl Crne Eqp in Canistr Strg Bldg Whse
WA401110	20MAR02*	16SEP02	01AUG00*	29DEC00	-430	Modify Canister Strg Bldg for Transloading
WA401120	02OCT00*	28SEP01	01OCT99	29SEP00	-250	Prepare Transloading Compliance/Readiness (FY01)
WA401122	01OCT01	27SEP02	02OCT00	29DEC00	-439	Prepare Transloading Compliance/Readiness (FY02)
WA401125	17SEP02*		02JAN01		-430	Start Sodium-Bonded FFTF SNF to ANL-W
WA401130	17SEP02*	16JUN03	02JAN01	28SEP01	-429	Transload Sodium-Bonded FFTF SNF
WA401132		01JUL02*		30MAR01	-315	SAR, FFTF SNF Transloading Approval
WA401135		16JUN03		28SEP01	-429	Compl Sodium-Bonded FFTF SNF t
FP 1.4.1.09.01.07						
WA10109	01OCT97	06JAN98	01OCT97	06JAN98	0	Prepare PFP SNF Alternatives Study (Deferred)
WA1011		06JAN98		06JAN98	0	Complete PFP SNF Alternatives Study
WA1012	02DEC96A	13JUN97A	02DEC96	28MAR97	-54	SNF Classification Input
WA10120	03MAR97A	30SEP97	03MAR97	30SEP97	0	Maintain Tech Interface w/PFP Fuel
WA10121	27MAY97A	30SEP97	31MAR97	30SEP97	0	Evaluate Re-Packaging Requirements
WA10122	30JUN97	30SEP97	30JUN97	30SEP97	0	Evaluate Recovery Plans / Fuel Removal
WA10125	01OCT97	30SEP98	01OCT97	30SEP98	0	Maintain Tech Interface with PFP SNF (FY98)
WA10126	01OCT98	30SEP99	01OCT98	30SEP99	0	Maintain Tech Interface with PFP SNF (FY99)
WA10127	01OCT99	29SEP00	01OCT99	29SEP00	0	Maintain Tech Interface with PFP SNF (FY00)
WA10128	02OCT00	28SEP01	02OCT00	28SEP01	0	Maintain Tech Interface with PFP SNF (FY01)
WA10129	01OCT01	28JUN02	01OCT01	28JUN02	0	Maintain Tech Interface with PFP SNF (FY02)

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF	FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05
WVA3927	01OCT99*	30JUN00	01OCT99*	30JUN00	0				Support T-3 Cask License Update - FY00 					
K														
K100120	01OCT98	30SEP99			0				Prep LWR Fuel Move Compliance/Readiness(FY99) 					
K100140	01OCT99	31MAR00			0				Prep LWR Fuel Move Compli/Readiness (FY00) 					
K100160		30SEP99			0				SAR, 200 Area ISA LWR Storage Approval 					
K100180	03APR00				0				Start Transfer of LWR Fuel to 200A ISA 					
K100200	03APR00	29SEP00			0				Transfer LWR Fuel to 200A ISA 					
K100220	02OCT00	28SEP01			0				Store LWR Fuel at 200A ISA (FY01) 					
K200100	02JAN97A	10JUN97A			0				Environmental Checklist, Site Wide SNF 					
K200120	01OCT96A	25OCT96A			0				Site Evaluation for 200 Area ISA 					
K200140	27MAY97A	27AUG97			0				NPH Assessment for 200 Area ISA 					
K200160	28APR97A	27AUG97			0				Support Building Specification for 200 Area ISA 					
K200180	28APR97A	27AUG97			0				Equipment Lists for Storage Systems 					
K200200	06JAN97A	07MAR97A			0				200 Area ISA Graphics 					
K200220	27MAY97A	25SEP97			0				200 Area ISA Specification Document 					
K200240	26JUN97	25SEP97			0				Refine 200 Area ISA 					
K200300	01OCT99	29SEP00			0				Manage NRF TRIGA SNF Move to 200A ISA (FY00) 					
K200320	01OCT99*	02MAY00			0				Prep Doc/Traing-NRF TRIGA SNF Move to 200A ISA 					
K200340	03MAY00				0				Start Transfer of NRF TRIGA SNF to 200A ISA 					
K200360	03MAY00	02JUN00			0				Transport NRF TRIGA SNF to 200A ISA 					
K200380		02JUN00			0				Complete NRF TRIGA SNF Move to 200A ISA 					
K200400	02OCT00	28SEP01			0				Maintain NRF TRIGA SNF at 200A ISA (FY01) 					
K300100	30JUN97	30SEP97			0				Monitor Evaluation for 200 Area ISA 					
K300120	30JUN97	30SEP97			0				Seismic Assessment for 200 Area ISA 					
K300140	01APR99	30SEP99			0				Acquire FFTF SNF Transport Trailer 					

Activity ID	Early Start	Early Finish	TA11 ES	TA11 EF	Var EF										
						FY97	FY98	FY99	FY00	FY01	FY02	FY03	FY04	FY05	
000160	01OCT97	29MAY98			0		Design CSB Fuel Storage Pad ▲								
000180	01JUN98	30SEP98			0			Construct 200 Area ISA Storage Pad ▲							
000200		01SEP98			0			SAR, FFTF SNF 200 Area ISA Approval ◇							
000260	01OCT99	29SEP00			0				Acquire/Manage FFTF SNF Move to 200A ISA (FY00) ▲						
000300	01OCT98*	30SEP99			0			Prep FFTF SNF Move Compliance/Readiness ▲							
000320	01OCT99				0				Start Transfer of FFTF SNF to 200A ISA ◇						
000340	01OCT99	29SEP00			0				Transfer FFTF SNF to 200A ISA (FY00) ▲						
000360	02OCT00	30SEP02			0						Transfer FFTF SNF to 200A ISA ▲				
000520	01OCT98*	30SEP99			0			Design Warehouse ▲							
000540	01OCT99	31MAR00			0				Construct Warehouse ▲						

## Regulatory Strategy for M-34 Negotiations

The following is an analysis of potential regulatory strategies, implementation requirements and associated costs that could be used as the basis for establishing target and interim enforceable milestones in the Tri-Party Agreement

### Justification and Impacts:

1. Comprehensive Environmental Response and Compensation and Liability Act (CERCLA) Engineering Analysis and Cost Assessment for near term removal actions.

STRATEGY/COST ELEMENT	COST <sup>1</sup>	SCHEDULE <sup>2</sup>	OTHER
<b>Conduct as CERCLA Removal Action</b>			
EE/CA and Record of Decision	\$20 K	2 months	Update EE/CA to include sludge pretreatment, no additional disposal alternatives; no additional risk assessment.
Revise Draft Document	\$15 K	2 months	
RDR/RAWP	\$60 K	3 months	
<b>Total</b>	<b>\$95 K</b>		

STRATEGY/COST ELEMENT	COST <sup>3</sup>	SCHEDULE <sup>4</sup>	OTHER
<b>Conduct as CERCLA remedial action</b>			
RI/FS	\$20 K	2 months	Modify EE/CA; no additional alternatives; more detailed screening, analysis, risk assessment.
Proposed Plan	\$15 K	2 months	
RDR/RAWP	\$60 K	3 months	
<b>Total</b>	<b>\$95 K</b>		

STRATEGY/COST ELEMENT	COST <sup>3</sup>	SCHEDULE <sup>4</sup>	OTHER
<b>Conduct as RCRA TSD closure</b>			
RCRA Part A permit application (K Basins)	\$20 K	2 month	Assumes interim status expansion; includes groundwater monitoring plan; no Part B application - straight to closure.
TSD documents (K Basins)	\$35 K	2 months	Inspection plan, contingency plan, training plan, operating record.
Closure plan/post-closure plan (K Basins)	\$60 K	3 months	Post-closure plan required because of remaining soil/groundwater contamination; defer cleanup to CERCLA OU.
RCRA Part A permit application (sludge treatment facility)	\$20 K	2 month	Assumes approval as interim status expansion; otherwise, full Part B permit required before construction can begin.
TSD documents (sludge treatment facility)	\$35 K	2 months	Inspection plan, contingency plan, training plan, operating record.
Closure plan (sludge treatment facility)	\$30 K	2 months	Assume no Part B application since process will only operate 1-2 years.
Radioactive air NOC (sludge treatment facility)	\$90 K	9 months	More definitive design data needed before NOC can be prepared.
Formal BARCT analysis (sludge treatment facility)	\$45 K	4 months	
Non-radioactive air NOC (sludge treatment facility)	\$60 K	9 months	More definitive design data needed before NOC can be prepared.
Formal BACT analysis (sludge treatment facility)	\$45 K	4 months	
TSCA permit (sludge treatment facility)	\$300 K	2 years	Includes demonstration test.
NEPA EA (minimum) (sludge treatment facility)	\$50 K	6 months	EA is minimum; may require EIS. EA/FONSI must be complete before construction can begin.
<b>Total</b>	<b>\$790 K</b>		

<b>STRATEGY/COST ELEMENT</b>	<b>COST<sup>3</sup></b>	<b>SCHEDULE<sup>4</sup></b>	<b>OTHER</b>
<b>Conduct as RCRA corrective action</b>			
RFI/CMS	\$20 K	2 months	Modify EE/CA; no additional alternatives; more detailed screening, analysis.
Modify permit with preferred closure option	\$15 K	2 months	
Corrective Measures Implementation (CMI) plan	\$60 K	3 months	
RCRA Part A permit application (sludge treatment facility)	\$20 K	2 month	Assumes approval as interim status expansion; otherwise, full Part B permit required before construction can begin.
TSD documents (sludge treatment facility)	\$35 K	2 months	Inspection plan, contingency plan, training plan, operating record.
Closure plan (sludge treatment facility)	\$30 K	2 months	Assume no Part B application since process will only operate 1-2 years.
Radioactive air NOC (sludge treatment facility)	\$90 K	9 months	More definitive design data needed before NOC can be prepared.
Formal BARCT analysis (sludge treatment facility)	\$45 K	4 months	
Non-radioactive air NOC (sludge treatment facility)	\$60 K	9 months	More definitive design data needed before NOC can be prepared.
Formal BACT analysis (sludge treatment facility)	\$45 K	4 months	
TSCA permit (sludge treatment facility)	\$300 K	2 years	Includes demonstration test.
NEPA EA (minimum) (sludge treatment facility)	\$50 K	6 months	EA is minimum; may require EIS. EA/FONSI must be complete before construction can begin.
<b>Total</b>	<b>\$760 K</b>		

3. Costs include review/revision cycles. Extent of review/revision is uncertain and costs could vary significantly.

4. Assumes aggressive internal and external review cycles.